



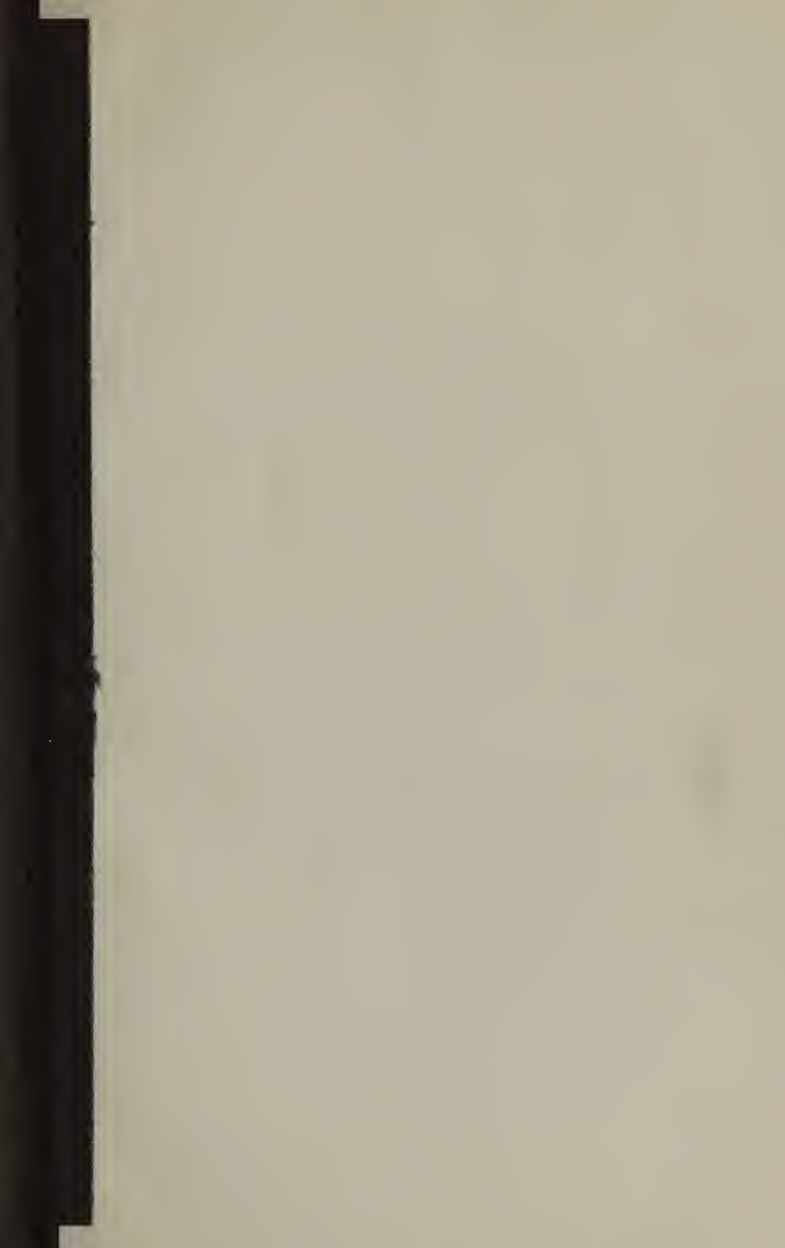
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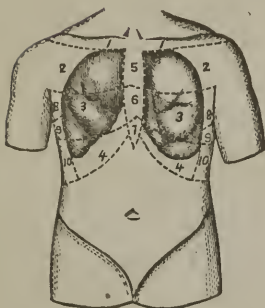


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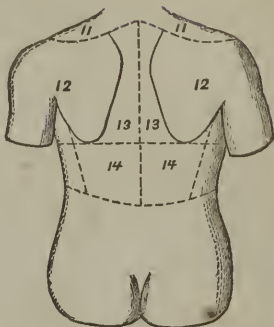


AUSCULTATORY PERCUSSION CHART.

THORAX.



ANTERIOR.



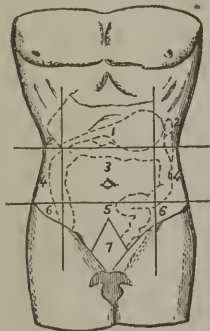
POSTERIOR.

1. 1. Clavicular Regions.
2. 2. Sub-Clavian.
3. 3. Mammary.
4. 4. Infra-Mammary.
5. 6. The Sternal.
7. The Lower Sternal.

8. 8. Axillary Regions.
9. 9. Lateral do.
10. 10. Lower Lateral.

11. 11. Acromial Regions.
12. 12. Scapular do.
13. 13. Inter-Scapular do.
14. 14. Dorsal.

ABDOMEN.



1. Epigastric.
2. 2. Right and Left Hypochondriac.
3. Umbilical.
4. 4. Right and Left Iliac.
5. Hypogastric.
6. 6. Right and Left Inguinal.
7. Pubic.

MANUAL OF INSTRUCTIONS

FOR

MILITARY SURGEONS,

ON THE

EXAMINATION OF RECRUITS AND
DISCHARGE OF SOLDIERS.

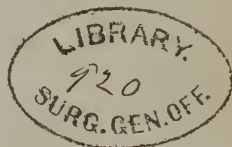
With an Appendix,
CONTAINING THE OFFICIAL REGULATIONS OF THE PROVOST-MARSHAL
GENERAL'S BUREAU, AND THOSE FOR THE FORMATION
OF THE INVALID CORPS, ETC., ETC.

PREPARED AT THE REQUEST OF THE UNITED STATES
SANITARY COMMISSION,

BY
JOHN ORDRONAUX, M. D.,
PROFESSOR OF MEDICAL JURISPRUDENCE IN COLUMBIA COLLEGE, NEW YORK.

NEW YORK:
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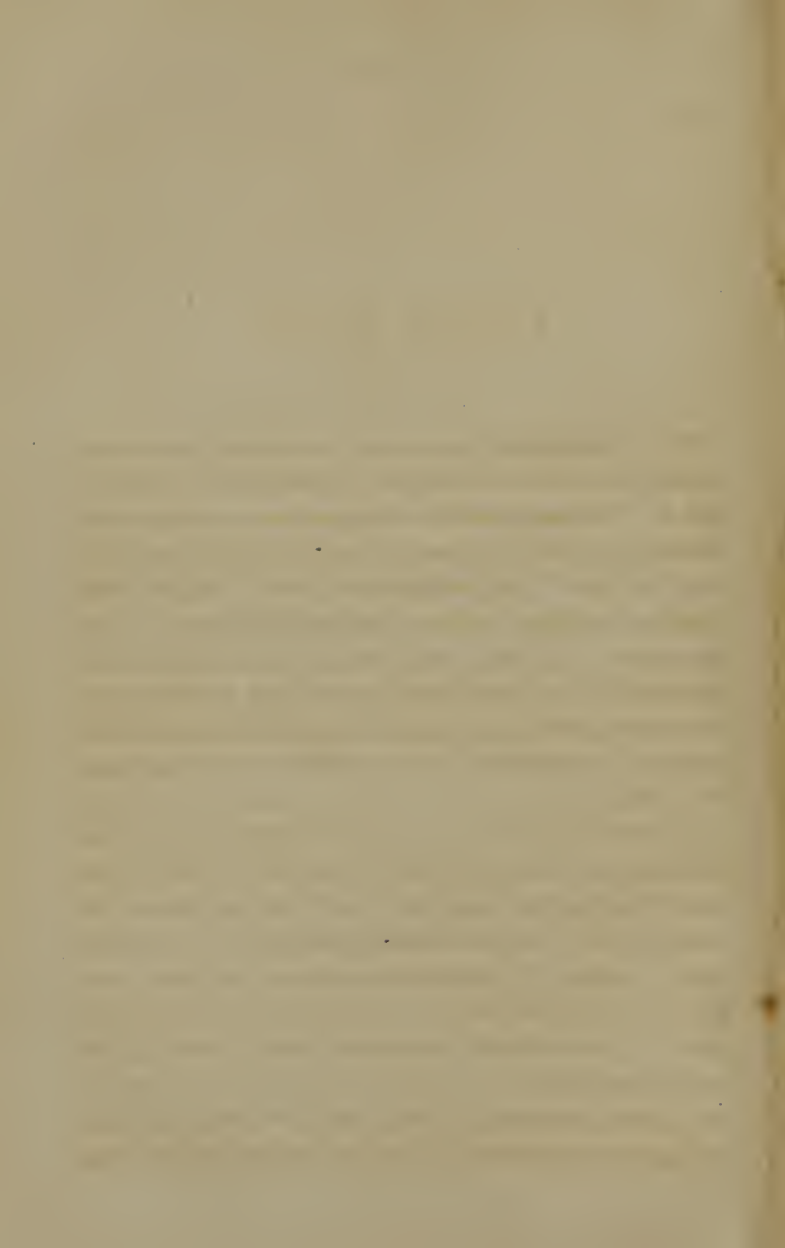
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DEDICATED

TO

BRIGADIER-GENERAL WILLIAM A. HAMMOND,

SURGEON-GENERAL, UNITED STATES ARMY.



P R E F A C E .

THE accompanying manual was prepared at the request of the United States Sanitary Commission, as a contribution to *Military Medical Jurisprudence*, a department whose importance is second to none in the domain of military medicine. And while aware that it would amply justify an enlarged treatise of its own, the Commission, in accordance with their usual practice in issuing medical monographs, have selected this as the most condensed and practically useful form, in which to present surgeons with a complete aide-memoire upon the subject of which it specially treats.

In undertaking the duty of its preparation, the single point kept in view, therefore, has been that of embodying in a form of succinct exposition, the whole of the vast and complex subject of physical disabilities in their relation to the military service. It has been my aim, at the outset, to be brief without being obscure—to omit nothing of indispensable, or even ordinary importance—and to draw my materials from the best accredited sources of information, and the highest authorities of the old world, because of the ages of experience possessed by European nations, and the large

amount of knowledge preserved in their medical annals upon this branch of military hygiene.

Selecting France and Prussia as the representative military nations of Europe, I have followed and adopted, as closely as possible, their codes of instruction on the subjects of the enlistment or discharge of soldiers. The Prussian code of 1858, entitled as follows :

“Instruktion für Militair-Aerzte zur Untersuchung und Beurtheilung der Diensbranchbarkeit oder Unbranchbarkeit Militairpflichtiger Rekruten resp. Soldaten, so wie zur Beurtheilung der Invaliditat im Dienst befindlicher oder entlassener versorgungsberechtigter Soldaten.” Berlin den 9 Dez. 1858, per Dr. Grimm, General-Stab Arzt der Armee und Chef des Militair-Medizinal-Wesens, contains only thirty-six pages, while the French code of 1862, entitled,

“Instructions pour les officiers de Santé sur les Infirmités ou Maladies qui rendent impropre au service Militaire.” Approuvé par le Maréchal de France, Ministre Secrétaire d'Etat de la Guerre, le 2 Avril 1862, d'après la proposition du Conseil de Santé des Armees,

contains one hundred and forty-five pages. This latter being not only the most recent, but also the most ample and exhaustive, was accordingly selected as the foundation of my manual. With the exception of the introduction, and the leading sections treating of generalities, which immediately follow it, the manual is, for the most part, a free translation of the French code. It was at first intended to have translated it literally, and to have thus adopted it without alteration, but on discussing the subject in a com-

mittee of medical gentlemen, it was deemed advisable, and as likely better to meet the wants of American surgeons, to entirely reconstruct certain parts, and to alter so many others in various ways, as to render it more of a paraphrase than, strictly speaking, a translation. The diffuse and discursive style so common to French writers, together with other idiomatic and professional peculiarities which need not here be mentioned, all conspired to justify the wisdom of this decision.

Brief notes have also been added, whenever the subject under discussion seemed to require further illustration, and, if few in number, both their paucity and brevity must be charged to the single desire, expressed at the outset, of making the work a simple manual, rather than an expanded treatise like those of Coche, Marshall, or Fallot.

In the preparation of a work of this kind, involving as it does a special and accurate knowledge of so many departments of medical science, no single, unaided mind could safely venture to trust to its own resources. And I am happy in this connection, therefore, to acknowledge my great and lasting obligations to Dr. WILLIAM H. VAN BUREN, Professor of Anatomy, in the University of the city of New York, for his patient and critical revision of my manuscript, and the many valuable suggestions offered by him in the course of its preparation. Nor am I the less under obligations of an equally lasting character to Dr. CORNELIUS R. AGNEW, one of the surgeons of the New York Eye Infirmary, who has not simply revised, but largely reconstructed the section on Diseases of the Eye.

Many passages in the manual bear an impress of obscurity,

which, it is almost needless to say, has been purposely given them, in order not to furnish any instruments of deception to those, who might seek here for assistance in accomplishing themselves in the art of malingering. While keeping this possibility constantly in view, it is believed that nothing of real importance to surgeons has been omitted.

I have embodied in the form of an appendix, the code of instructions relating to the United States Army, adopted by the Board of Medical Officers, convened in Washington for that purpose, on the 15th of April, 1863, to which I have further added the Regulations governing the formation of our Invalid Corps; the Prussian list of disqualifying diseases, and the Regulations governing the formation of their Invalid Corps.

The following pages are now committed to the candid judgment and impartial criticism of the profession, in the hope that they will both subserve the interests of those for whose benefit they were written, and be found worthy of the subject they are intended to illustrate.

J. O.

NEW YORK, *June*, 1863.

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MANUAL OF INSTRUCTIONS
FOR
EXAMINING SURGEONS.

INTRODUCTION.

RECRUITING AS A BRANCH OF MILITARY HYGIENE.

THE profession of arms is of all others that which requires in its followers the highest degree of physical perfection. Unlike any of those connected with the civil arts, it constantly subjects the soldier to those vicissitudes of life, which are disturbing shocks to the rhythm and harmony of vital functions. From a state of passive inactivity, it suddenly calls upon him to perform long and fatiguing marches, to carry unaccustomed loads, to endure "fierce extremes" of heat, cold, and moisture, without adequate protection against their effects; to dispense with sleep when at times most exhausted, to take food at irregular and protracted intervals, and to subsist upon that which is often ill-cooked, inferior in quality, and unseasonable in character, or become unpalatable from monotony of repetition.

Yet such is the elasticity of nature in youth, that these vicissitudes, although depressing in their immediate influences, are easily recovered from, if, with a due

regard to hygienic laws, the recruit is gradually broken into acquiring the habit of encountering them. While originally weak men may thus be hardened, it will always rest with commanding officers to see that due regard be had to the constitutional tendencies and the recuperative powers of their men, while inuring them to the hardships of the life they are to follow. The young may be as strong as the middle-aged, but they always differ from them in powers of endurance.

Endurance, therefore, is the result of an acquired habit of muscular activity imparting tone to the whole system. And it is the culminating point in Military Hygiene, to cultivate the physical powers of young men by a daily practice operating within the limits of their strength, and never pushing exercise beyond fatigue, nor fatigue into prostration, but pursuing its course in such a manner, as to secure a progressive development in the foundation of those powers, as well as a gradual evolution of muscular activity, so that "he who has once carried the calf may be brought to carry the ox."

No one understood this physiological law better than Napoleon, nor practised more faithfully upon it, and in illustration it is only necessary to cite the great victory of Dresden, which has been well designated a triumph of Military Hygiene.* On the afternoon of the second day of the battle, when the French army had been frequently repulsed in its attempts to cross the Elbe, the Young Guard arrived after a protracted march, beneath a sweltering heat. The moment seemed auspicious for deciding the fate of the day—the allies had long been

* ODIER, *Cours d'Etudes sur l'Administr. Militaire*, vol. iii., p. 110.
REVOLAT, *Hygiene Militaire*.

harassed by the French artillery, yet still their batteries defied the passage of the river. All eyes were now turned towards the great chief in momentary expectation of that word of command which was to dash this impetuous young host upon their obstinate foes. But the modern Cæsar understood the human constitution better than to call upon jaded troops to storm intrenchments. They were ordered to bivouac under the shade of the trees bordering the river. They were permitted to rest and refresh themselves with food and sleep until late in the day. And when at sunset they rose, a refreshed and recuperated corps, and were hurled like a thunderbolt against the enemy, the energy with which they crossed the stream, stormed the heights, and swept the Russian cannoneers from their hundred guns, testified to the wisdom of that homage which had been paid to the powers of nature. Had our generals, at the first battle of Bull Run, remembered this lesson of a great master, they too might have changed the fate of the day, and possibly shortened the life of the rebellion. How much of this wisdom of Napoleon was due to the considerate forethought of Larrey is not told us, but that he was consulted on the subject we can entertain no doubt.

In ancient no less than in modern times the selection of recruits has always been made from the most virile of the population. If a state of physical integrity be essential to the soldier at the start, that integrity must be satisfactorily ascertained beyond a peradventure, before he is admitted into the ranks. Stature and harmony of form do not alone constitute vigor of body. All modern nations understand the truth of the principle laid down by one of the earliest writers on Military Science. "*Utilius est enim fortes milites esse*

quam grandes," and from whatever class in society taken, the recruit is always measured by his strength rather than by his size.*

It may be stated as a problem immemorially demonstrated by physiology, and deserving of consideration by economists, if only on the score of material cost, that an army recruited from the agricultural population of a country is, *ceteris paribus*, a cheaper, and at the same time more effective one than any collected from large, commercial communities. Having more physical stamina, it possesses a higher power of resistance to the causes of sickness and mortality, and presents fewer candidates for those forms of invalidism, and consequently exemption, which come from what are technically termed broken constitutions, or constitutions in which the original fund of reserved force has been exhausted—either by hereditary taints, improper education, diet, habits of occupation and life—in a word by the thousand circumstances in the midst of which civilized man lives. The ancients understood that thoroughly, and endeavored whenever possible to enforce this physical dogma. Vegetius,† writing in the

* STATURE OF THE FRENCH ARMY.

M. C. Ft. I. L.

Infantry.....	1. 561	= 4 9 7 $\frac{1}{2}$	—French measure
Riflemen.....	1. 761	= 5 5.	
Artillery	}	1. 733	= 5 4.
Engineers			
Dragoons	}	1. 706	= 5 3.
Lancers			
Chasseurs	}	1. 679	= 5 2.
Hussars			

Persons are exempt whose stature is below 1 mill. 506 cent. or 4 ft. 9

lin.—ROSSIGNOL. *Traite d'Hygiene Militaire*.

† De Re Militari, lib. I., cap. iii.

time of the Emperor Valentinian, and when the influences of Asiatic conquests and the general introduction of Eastern effeminacy had enervated the Roman youth, expresses himself in the following unequivocal terms: "On which account I think no one can doubt that the rural population is best suited to bear arms, because it has been reared under the open sky and in the midst of labor. It is patient under heat—indifferent to shelter—ignorant of baths and luxuries—frugal in taste—content with little, and possesses limbs inured to every species of labor. Rural life itself accustoms men to handle implements, to dig trenches, and to bear loads. But, on the other hand, since necessity also requires that dwellers in cities should perform military duty, ere their enrolment as militia, they should be taught to run—to labor—to bear loads, and to endure heat and toil; let them also learn to live on coarse, homely fare, and to dwell now under tents, now under the sky. For I know not why it is that death is dreaded less by him who has known the least luxuries in life."

So, too, in the distribution of duties, the considerations due to age and relative strength were regarded with a scientific accuracy, and an appreciation of physiological laws which the moderns have never excelled. It would not be amiss for us to begin something similar in this respect, by distributing enlisted men among the various arms of the service according to their degree of physical vigor. Thus, instead of allowing to arbitrary and personal caprice the selection of that arm of the service in which the recruit is to enter, make it a question of physical adaptation of means to ends. Let his powers and their reach determine where he can be most useful to

the country, and least exposed to fall as a sick man upon her care. Use the instruments which science has invented to disclose the latent energies that slumber out of sight, and to indicate whether his constitution foreordains him for a stout footman—a swift skirmisher—an agile horseman—a ready artificer, or a sturdy cannoneer. It is skill to be able to read his undeveloped future of power, as well as the undeveloped future of disease, which some lurking predisposition suggests. Let him be developed and improved, as well as accepted and enrolled.

SECTION I.

DUTIES OF MEDICAL EXAMINERS.

§ 1. The duties which devolve upon the examining surgeon are both delicate in their nature and of difficult performance. Intrusted with the responsibility of deciding some of the most perplexing questions in medical science upon only a few moments reflection, he cannot approach the discharge of his office without feeling how essentially important to the right understanding of every case, are the smallest apparent details of which it is made up. The causes of disease, the catenation of symptoms, their usual and ordinary progress, the results now present and visible, now unseen and latent, which they have produced in the human system—age, temperament, and occupation—all these are data which must be weighed and considered in every instance, before he can correctly form an opinion. When, in addition to the incertitude of natural phenomena, the accidents of *fraud* by simulation, or concealment, enter into the problem, it is not difficult to see that with all the skill possible, and all the readiness of observation employed, cases of deception will at times escape detection.

Instruments for Special Diagnosis.

§ 2. There are certain instruments of indispensable importance to examining surgeons, and without which none should undertake a methodical exploration of the human system. These are—

A watch (to test deafness, pulse, breathing, &c.)

Magnifying-glass (to examine the eyes and cutaneous diseases).

Spatula.

Measuring tape.

Catheter and sound.

To these may be added, for greater precision, and when time is abundant—the following, viz :

A Stethoscope.

Laryngoscope.

Speculum auris.

“ ani.

Ophthalmoscope.

SECTION II.

GENERALITIES OF EXAMINATION.

§ 3. The law requiring that the recruit should be examined naked, standing, and in the day-time (*vide* Appendix), the following general rules will be found of service in beginning an examination.

General Bodily Appearance.

§ 4. The first glance at the anterior and posterior portions of the body will give the *tout ensemble*, or aggregate appearance of its conformation, and serve to answer the first interrogatory of, *faulty*, or not? The general constitutional vices, or anatomical deformities to be looked for as causes of disqualification are, *marasmus*, *obesity*, *extensive deformities of the face*, *large*, *livid*, *hairy spots*, extensive loss of substance of the

cheeks, loss of one or both eyes—*of the nose*—of the whole or a portion of a limb—of the *testicles*, deformities of limbs, club-foot, bandy-legs, knock-knees, &c.*

§ 5. Inasmuch, however, as a simple glance is not always sufficient, a more particular and minute examination must be made, in order that whatever may have escaped the *sight*, may be discovered by the *touch*, a sense whose assistance is of infinite service in the diagnosis of many external affections.

The surgeon will therefore begin a systematic and successive examination of the various portions of the body, from the *head* downward, proceeding in each region from the exterior to the interior. Each organ should be specially interrogated by every known means, in order to ascertain—

A. If any thing interferes with that freedom and activity of its functions necessary for the performance of military duty.

B. Whether any portion of the body is incapacitated from enduring the burthen of clothing, arms, or equipments.

C. Whether from inherent debility, morbid predisposition, or existing disease, the health, and even the life

* The following description of the “good points” which the recruit should present anatomically, is so terse, comprehensive, and scientifically accurate, and stated with such elegance, and pregnant brevity, that I would not mutilate it by attempting an English paraphrase:

“Sit ergo adolescens martio operi deputandus, *vigilantibus oculis, erecta cervice, lato pectore, humeris musculosis, valentibus brachiis, digitis longioribus, ventre modicus, exilior cruribus, suris ac pedibus non superflua carne distentis, sed nervorum duritia collectis. Cum hæc in tyrone signa deprehenderis, proceritatem, non magnopere desideris. Utilius est enim fortes milites esse quam grandes.*—VEGETIUS, *De Re Militari*, lib. I., c. p. vi.

of the individual would be endangered by the circumstances attendant upon the duties of a soldier.

D. Whether the party is suffering from any infirmity which, while not sensibly impairing organic functions, is yet so disgusting in character as to render him repulsive and uncompanionable.

§ 6. **Head.** Examine this closely for deformities, loss of substance of bones, extensive cicatrices, and cutaneous diseases. Pass the hand through the hair and ascertain whether the scalp be hot, and humid, or dry.

§ 7. **Neck.** Fulness in the region of the splenii muscles, is generally an indication of strength of body.

§ 8. **Thorax.** The thorax, particularly in its upper (clavicular and subclavian) portions affords a better index of the constitutional vigor of the individual than any other part of the body. When there is fulness, hardness, and symmetrical development of these regions and base of the neck, a presumption of constitutional soundness can safely be indulged.* On the other hand,

* Mere lack of symmetry between the sides of the chest, is not, in itself, an indication of structural change in internal organs (*e. g.*, hypertrophy, phthisis, &c.), but may be due to a variety of causes occasioning flatness of the pectoral muscles. Constantly using the right arm, or sleeping on that side, by depressing the shoulder, may give rise to this defect of uniformity.

Dr. Wm. H. Thompson, of New York, one of the State Medical Inspectors of Recruits, in his Report to the Surgeon-General, states, that "taking the whole of 5,000 observations, the *right* side was flatter than the left in 75 per cent. nearly; and out of the more marked cases of 2,000, the right side was flat in 87 per cent. . . . In 16.05 per cent., however, the left side was the flattest, though the persons were right-handed." — *Annual Report of the Surgeon-General of the State of New York*, transmitted to the Legislature, January 27th, 1863, p. 60.

Vid WOILLEZ, Recherches pratiques sur l'Inspection et la Mensuration de la Poitrine

sinking or depression of these parts, particularly on the left side, should always suggest the necessity of auscultation, as it is well known that the left lung suffers more commonly than the right, and that the apices and posterior parts of the upper lobes of the lungs are points of election for tubercular deposit.

Having noted these things, now measure the circumference of the chest, in its ordinary condition of intermediate expansion, by passing the tape around on a line with the nipples. This measurement should not fall below thirty-one and a half inches, nor be less than one-half of the stature of the individual. The expansive *mobility* of the chest should be from two to three inches.

The following table will explain this at a glance:

MINIMUM CIRCUMFERENCE OF THORAX TOLERABLE IN RECRUITS.*

HEIGHT.		CIRCUMFERENCE OF THORAX.
Feet.	Inches.	Inches.
5	3.....	31½
5	4.....	32
5	5.....	32½
5	6.....	33
5	7.....	33½
5	8.....	34
5	9.....	34½
5	10.....	35
5	11.....	35½
6	00.....	36
6	1.....	36½
6	2.....	37
6	3.....	37½
6	4.....	38

§ 9. **Abdomen.** In health the abdomen is soft, slightly convex, and its walls elastic. The regions to be examined by palpation are the right hypochondriac and epigastric, for diseases of the liver usually manifested by enlargement; left hypochondriac, for enlargement of

* *Military Hygiene*, by Brigadier-General W. A. Hammond, Surgeon-General United States Army, p. 38.

spleen, manifested by tumor and projection of the lower left ribs. Mesenteric disease reveals itself through general enlargement; while fæculent accumulations, most common in the large intestines, are shown by rough prominences in both the iliac regions.

§ 10. **Limbs.** The limbs should be free from all deformities in size, form, or relative proportion, *e. g.*, *atrophy*, *rickets*, *bandy-legs*, *knock-knees*, or *differences in length*.

§ 11. **Feet.** The feet should be arched, without deformity, or loss of substance of any of the toes, particularly the great ones.

§ 12. **Stature* and Weight.** The stature should not fall below five feet, three inches, nor the weight below that marked as its minimum accompaniment in the subjoined table:

HEIGHT.		MINIMUM WEIGHT, lbs.
Feet.	Inches.	
5	3.....	115
5	4.....	120
5	5.....	125
5	6.....	130
5	7.....	135
5	8.....	140
5	9.....	145
5	10.....	150
5	11.....	155
6	00.....	160
6	1.....	165
6	2.....	170
6	3.....	175
6	4.....	180
6	5.....	185
6	6.....	190
6	7.....	195

* Wherever there is suspicion of an attempt to decrease stature by curving the spine, the recruit should be measured supine.

SECTION III.

GENERAL OBSERVATIONS UPON FEIGNED, ARTIFICIALLY PRODUCED, AND CONCEALED DISEASES.*

§ 13. By the term *feigned disease*, is to be understood a train of symptoms provoked by artificial means, for the purpose of simulating a real disease.

An *artificially* or *self-provoked* disease exists in fact, but it is the result of criminal manœuvres performed upon the person, to avoid the discharge of some duty.

A *dissembled* or *concealed* disease, is one which, although existing in fact, is purposely concealed with an intention to defraud observation.

The military surgeon should always be on his guard against *feigned* diseases, as well among soldiers seeking for a discharge, as among recruits; and also be vigilant to detect *dissembled* or *concealed* diseases in substitutes and volunteers.

* For exhaustive details on this subject, the surgeon will do well to consult, ZACCHIUS, *Quæstiones Medico-Legales*, lib. III., tit. II.; FODERE, *Medecine-Légale*, vol. 2, p. 457; MAHON, *Medecine-Légale*, vol. 1, p. 324; DEVERGIE, *Medecine-Légale*, vol. 1, p. 605; BECK'S *Medical Jurisprudence*, vol. 1, art. "Feigned Diseases;" CASPER, *Medecine-Légale*, vol. 1, p. 238; PERCY and LAURENT in *Dict. des Sciences-Médicales*, art. "Simulation;" *Cyclopædia of Practical Medicine*, art. "Feigned Diseases;" COPLAND'S *Dictionary of Practical Medicine*, art. "Feigning Disease;" DUNGLISON'S *Medical Dictionary*, art. "Feigned Disease."

Artificially Produced Diseases.

§ 14. Artificially produced diseases which, as we have seen, are diseases in fact, occasion the greatest perplexity to the surgeon, by reason of their rarely disclosing the sources of their origin; and in general it is only when recent, that their origin can at all be discovered. In doubtful cases the surgeon will have to resort to all the questions enumerated below. (§ 23.)

Dissembled, or Concealed Diseases.

§ 15. The duty of the surgeon in exploring a party to discover dissembled or concealed diseases, is always a difficult one, for many diseases having their seat in internal organs, when they have not produced constitutional, nor sympathetic disturbances, will often escape observation. This is particularly the case with intermittent affections, which may exist undiscovered so long as the surgeon does not himself witness a paroxysm.

Feigned Diseases.

§ 16. In treating of simulation in connection with the various diseases which are hereafter to be enumerated, the methods of *detecting* fraud will alone be given.* It cannot be necessary to a surgeon experienced in the physiognomy of disease to be told what and how many are

* As these pages cannot be restricted in their circulation to the hands of surgeons alone, it has been deemed judicious to exclude from them all enumeration of the *pharmacopœia* and the *enginery* from which simulators draw their means of deception. The sources of information touching these practices are well known to all physicians, and elsewhere pointed out, and aside from policy, it would only augment the size of this manual without adding to its usefulness to enter into the pathogeny of feigned diseases.

the particular agencies which criminal design employs to impose upon his credulity. The differential diagnosis of the real and the feigned disease will rarely fail to expose the incongruity existing between the actual and the alleged malady. The ignorance of symptomatology—of sympathetic, and consequential manifestations—of the law of periodicity—of the co-ordination of vital forces and functions—in a word, of anatomy and physiology, renders the majority of simulators mere physical clowns. The rationale of simulation being a travesty of natural phenomena and a violation of truth, in its details, generally exposes itself at a glance to the prying, skilled eye of science. Nevertheless, we must not despise the class entirely. There are some experts in it, and even physicians have been found in other countries selling their knowledge in this way, and prostituting their skill to the basest of purposes, by instructing malingerers in the use of harmful drugs, and in the performance of criminal manipulations, calculated to impair, temporarily, their vigor of body. But in all cases the surgeon must be prepared to meet the simulator on his own ground, and if need be, *superare malitiam malitia*, by artfully circumventing him.

§ 17. For obvious reasons, chronic forms of disease are of preference feigned by malingerers. As it is known among recruits that the examination of the surgeon must, of necessity, be brief—that it cannot be repeated, but must terminate his inquiry once for all, it is naturally supposed that the more numerous the symptoms they can present the greater will be the bias of a first impression in favor of their disability. Others select milder forms of diseases whenever they mistrust their ability to simulate their acute type, alleging with much reiteration

tion, that they have been worse even than they now are, and that the surgeon sees their malady under its most favorable aspect. This is commonly the case when *rheumatism, neuralgic pains, chronic piles, lumbago, diseases of the bladder or kidneys, constant severe headache, ulcers, deafness, old sprains, &c., &c.*, are feigned.

§ 18. The following synoptical table exhibits feigned diseases under three pathogenetic classifications, viz. :

A. Such as depend upon the influence of the *will* upon muscles of voluntary motion.

B. Such as are excited by artificial agents without lesion of tissues.

C. Such as are similarly excited with lesion of tissues.

A. Class First.

§ 19. Feigned diseases depending upon the influence of will upon muscles of voluntary motion, and an impaired state of the animal functions.

Epilepsy, idiocy, loss of memory, mania, deafness, ptosis of right eyelid, involuntary and convulsive movements of the eyes, or their lids, strabismus, dumbness, aphonia, stammering, torticollis, curvature of the spine, voluntary vomiting, rumination, retention, and incontinence of urine, general or partial tremor, paralysis, retraction, or continuous flexion of fingers and limbs, lameness, unnatural elevation of one shoulder, partial or complete ankylosis of a limb, inversion or torsion of one foot.

B. Class Second.

§ 20. Feigned diseases imitated by artificial means and presenting as yet no alteration of tissues nor important lesion of functions.

Jaundice, ecchymosis, phthiriasis, purulent discharge from ears, hæmoptysis, hæmatemesis, hæmaturia, internal piles, prolapsus ani, excretion of vesical calculi, varices, hæmorrhoidal flux.

C. Class Third.

§ 21. Feigned diseases, voluntarily excited, and imitated by the internal or external use of agents, capable of producing an unnatural change in the form, volume, integrity, continuity, and sensibility of different parts of the body.

Wounds, mutilations, ulcers, cutaneous diseases, and petechiæ, ophthalmia, scurvy of gums, caries, partial or total loss of teeth, vertigo, mania, emphysema, ascites, tympanites, hydrocele, vomiting of food, syncope, feebleness of pulse, palpitation of heart, amaurosis, fever, emaciation.

Diseases which may be Concealed.

§ 22. Incontinence of fæces, rheumatism and neuralgic pains, prolapsus ani, retention or incontinence of urine, shortening of an inferior extremity, loss of memory, epilepsy, somnambulism, periodical hæmoptysis, asthma, tænia, habitual vomiting, gravel or hæmorrhoidal flux, chronic catarrh of bladder, intermittent fever, syphilis.

SECTION IV.

RULES FOR THE EXAMINATION OF SUSPECTED MALINGERERS.

§ 23. Whenever a disease is alleged to exist, by a recruit, the first duty of the surgeon is to determine whether it be of such a character as admits of being *feigned*. This is the starting point of all subsequent inquiry.

A. In cases of doubt, it is always safest to assume the disease as feigned, rather than as real, and to proceed to a minute and detailed examination of the party with all possible delicacy and moderation, and without any seeming suspicion.

B. If the history and symptoms of the alleged disease, and the changes wrought by it in the economy, are at variance with the regular and ordinary course of the true disease, simulation may be suspected.

C. The party should be questioned in relation to symptoms, in order to test their correspondence with those usually present in similar diseases, and by leading him on vaguely, with irrelevant inquiries touching other disorders, he will often, if a malingerer, expose himself by confounding symptoms belonging to dissimilar and opposite diseases.

D. In investigating an internal malady, assume to believe in the existence of all the symptoms narrated; then apply the rule *contraria contrariis*, and ask leading and suggestive questions touching the presence of incongruous symptoms, such as amblyopia, hæmorrhage from the left ear, swelling of the thumbs (Casper), coldness of the tongue, &c. The simulator will often entrap

himself by an affirmative reply, based upon the supposition that he had mis-stated the symptoms of his malady and can now correct his mistake by adopting new ones.*

E. By calling attention away from himself, the party may often be made to perform acts entirely incompatible with the existence of his alleged disease, and thus expose his deception.

SECTION V.

CONSTITUTIONAL DISEASES.

§ 24. Whatever may have been said in favor of, or against temperaments, and whatever the disputes in relation to their classification, it is an admitted fact, that in every age, and among all men, they have been recognized as influencing the predisposition to disease.† On this account, therefore, if no other, the surgeon should interrogate them as sources of ætiological influence. For, the physical aspect presented by the body in this particular expresses the predominance or exaggeration of either the *sanguineous*, *lymphatic*, or *nervous* systems, and the consequent predisposition to those diseases

* Ut ergo prudens Medicus ad decernendum ab ipsis Jurisconsultis de veritate vocatus, non decipiatur, plura in consideratione adhibeat necesse est; et primo partem quæ dolet, vel quæ dolore simulatur; secundò doloris speciem; tertio causam doloris, et maximè siquam enarravit patiens ex procatareticis et externis; quarto doloris ipsius durationem; quinto remedia adhibita seu adhibenda.—*Zacchias*, Op. cit., lib. III., tit. II., q. IV.

† Military Hygiene, by Brigadier-General Wm. A. Hammond, Surgeon General U. S. A., page 78.

having their origin in one of these three great centres. Hence, in the lymphatic, we look for diseases of the glandular system; in the sanguine, for diseases of the circulation; and, in the nervous, for diseases reflected from preternatural irritability of the cerebro-spinal system upon large organs, like the stomach, brain, or heart. But, inasmuch as there are no pure or unmixed temperaments, no absolute deductions can be drawn from the foregoing classes, though in each case, taking temperament only as a relative element in the computation, we shall still find it acting as an important postulate to predisposition.

Sources of Indication.

§ 25. There are three sources through which radical constitutional impairment ever exhibits itself externally, viz.:

1st. Through the *glandular* system, producing the true strumous diathesis.

2d. Through the *osseous* system, giving rise to rickets and rickety deformities.

3d. Through the *skin*, giving rise to obstinate cutaneous diseases.

Whenever these manifestations have plainly existed to such a degree and for such a length of time as to indicate a chronic impairment of the functions of nutrition and secretion, it is evident that such a state borders on actual disease, and unfits the party for military service.

Feebleness of Constitution.

§ 26. Without the existence of special disease in any organ or tissue of the body, there may yet be presented by an examination of the person, such proofs of a *want*

of tone and of powers of endurance, and such an absence of recuperative force and of vigor in vital functions, as to show that the constitution could not rally against causes of depression, nor promptly re-establish itself with the spontaneity due to plenitude of original vigor. This condition, popularly designated as feebleness of constitution, cannot always be defined with precision, because in each individual, the circumstances of *absolute* and *reserved* vigor express themselves through different physical phenomena, and what might be relative weakness in one, born of habits of life, and occupation, temporary and remediable, would in another indicate congenital absence of tone. It is idle to suppose that constitutions can be re-cast. Original nature may be modified, but never entirely altered. We must judge of the vigor of the human edifice by the character of its foundation, for where this is weak, the superstructure, however beautiful, is only calculated to deceive us. The following are manifestations which generally accompany feebleness of constitution: *Excessive stature without corresponding breadth of person; long, thin neck; narrow chest, sunken or flattened; shrunk abdomen; flaccidity, without development of the belly of large muscles; limbs larger at the joints than in the centre, articulations coarse; skin soft and flabby, and almost barren of hair; lips pale, and a general indication of want of activity in the vital functions.*

Although many of these conditions are presented during convalescence from acute affections, yet the skillful surgeon will readily detect, by the degree to which the constitution is affected, whether the diathesis presented by the party be *radical* or merely *accidental* in its character.

Anæmia.

§ 27. Anæmia, characterized by general debility, emaciation, flaccidity, and pallor of tissues, sometimes even infiltration of the cellular tissue and soufflé in the carotids, can only justify the rejection of a recruit when it is of the gravest character. Misery, certain professions followed in dark and damp places, labor disproportioned to strength, venereal excesses, scurvy, convalescence from acute diseases, are all determining causes of this diathesis, which is removable under proper hygienic and therapeutic treatment. Rejection in such case must rest upon the question of extent of disease, and probable time required to recover from it. Anæmia may be artificially produced, but not feigned.

Scrofula.

§ 28. Scrofula, when unmodified by the influences of puberty, and characterized by glandular enlargements, or ulcerations in the *cervical* or *submaxillary* regions, is a disease of sufficient gravity to justify rejection. When, however, this diathesis, united to an otherwise tolerable state of health, is little developed and constitutes more of a predisposition than a positive disease, and in particular when this predisposition seems to arise rather from the bad hygienic conditions in the midst of which the party has lived, it often happens that the change of habitation, diet, and occupation, essentially improve the waning constitution, and convert into a healthy soldier a civilian, whose mode of life otherwise doomed him to the infirmities born of scrofula.

This constitutional vice is indicated by slight puffiness of the face, thin, transparent skin, through which

the veins appear prominent, *the alæ nasi are smooth and tumefied, the upper lip thickened, the limbs are rounded, the flesh soft and flaccid, and the abdomen slightly enlarged.* In a more advanced stage, *the eyelids are swollen, red, everted (blear-eyed) with discharge from the meibomian glands, and the ears surrounded by suppurative crusts.*

Although malingerers sometimes attempt to simulate scrofula, by making irritating applications to the eyelids, nose, and upper lip, the absence of all constitutional complications readily exposes the cheat. Besides which scrofulous ulcers and scars have a specific character, the former having pale and flabby borders, with thin edges, and discharging a serous matter, mixed with grumons, cheesy clots; and the latter being deep, adherent to the subcutaneous tissue, bluish colored when recent; white when old, irregular with transverse bridges, and being found in the track of the lymphatic ganglions. The same degree of scrofula which justifies rejection, likewise justifies discharge.

Syphilis.

§ 29. Primary or local syphilis does not justify rejection, unless accompanied by extensive ulcers, calculated to leave large, feeble, irregular cicatrices, and much loss of substance. The same is not the case with secondary syphilis, which denotes a true venereal saturation of the constitution, and is marked by profound alteration of the vital functions, engorgement of the cervical, axillary, inguinal, and lymphatic ganglions, ulcerations of the mucous membrane of the nose, caries of the bones, &c., in those whose constitutions are seriously affected by it. This condition of body, although cura-

ble under skilful treatment, yet indicates such impairment of the constitution, as renders it certain that the party cannot withstand the duties and hardships of a military life. He must be rejected.

Scurvy.

§ 30. Scurvy, which is never congenital, but always acquired, presents itself under different degrees of intensity. The judgment of the surgeon will accordingly be guided by the peculiar phases it reveals, in determining the questions of rejection or discharge. In slight cases, and where the morbid manifestations are simply local, improved hygienic conditions will usually suffice to produce a rapid recovery. But when the disease has assumed a serious form, and is accompanied by fungous gums, falling of the teeth, œdema of the limbs, discoloration of the tissues, serous infiltration, petechiæ, passive hæmorrhage, and muscular pains, the recruit must be rejected.

Cachexies.

§ 31. Various cachexies resulting from malarious, lead, or mercurial poisoning, or others arising from the practice of certain avocations, may also come under the notice of the surgeon. So long as there is no manifest impairment of the constitution, and a change of habits and occupation seems likely to insure a recovery, rejection is unjustifiable. But when alterations in structure have resulted, or organic functions are so unsettled as to fall readily into morbid conditions under slight exciting causes, the recruit must be rejected. The same rule will apply to discharges.

These cachexies may be artificially produced, but cannot be feigned.

Tuberculosis.

§ 32. Tubercles, although most commonly exhibiting themselves in the lungs, or peritoneum, are yet often found in other tissues. Their deposition depends upon a peculiar diathesis, which manifestly impairs the constitutional vigor necessary for the military service. In their second stage (that of softening and suppuration) their diagnosis is easy. But in their first stage, where they remain in the form of a hard, indolent, isolated deposit, producing no sensible disturbance of any of the organic functions, they may escape observation. It is different with masses of tubercles which even in their first stage are generally appreciable. It is through the constitutional manifestations that the surgeon must seek for revelations of this diathesis wherever he suspects its existence.

Melanosis.

§ 33. Melanosis which is a deposit of black pigment in the tissue of diseased organs, does not differ greatly from cancer, and when occurring in encephaloid structures, constitutes true melanoid cancer. At times it occurs in organs not essentially diseased.

Any attempt at feigning this affection by introducing coloring pigments beneath the skin, is of so gross a nature as to readily expose itself.

Cancer.

§ 34. Several morbid conditions of structure essentially different in their anatomical elements, are confounded under the common designation of cancer—such, for

example, as *scirrhous, encephaloid, and colloid cancer*. Whatever its seat or nature, cancer ever presents itself under the form of a fungous growth, tumor, or of open ulcerations. Being always a serious affection, with disposition to recurrence when locally extirpated, its diagnosis becomes of the greatest importance to the surgeon, and as this is at times extremely difficult, all his sagacity will be required in arriving at a conclusion in the premises.

The first thing to be remembered is that cancer is of rare occurrence in youth, and, secondly, that it cannot be feigned. In recruits, therefore, the presumptions are against it; in old soldiers it is different; but in both classes rejection or discharge must follow upon its detection. The liability to alteration of the lymphatic glands in the vicinity of the suspected cancerous disease is to be borne in mind as a characteristic sign.

Canceroid and Fibro-plastic Tumors.

§ 35. The same rules which apply to cancer, will apply to canceroid and fibro-plastic tumors. These, although differing from the former in anatomical features, yet engender the like disability for military service.

SECTION VI.

DISEASES OF TISSUES.

Diseases of the Skin.—Eczema and Lichen.

§ 36. If slight and acute, neither of these affections are necessarily disqualifications for military service, but

when become chronic and extensive, the recruit must be rejected, and the soldier discharged.

All chronic and extensive diseases of the skin of parasitic origin, are causes of rejection, because of their contagiousness, unless the circumstances of the service require that the recruit should be accepted and sent to the hospital for cure.

Erysipelas.

§ 37. This affection, whenever it has produced serious results, may require the rejection of the recruit. Ordinarily it does not.

Artificially Produced Exanthemata.

§ 38. Certain articles of food, varieties of shell-fish in particular, may be used to provoke eruptions and to deceive the surgeon. It is only necessary to allude to this as a possibility not to be overlooked.

Ulcers.

§ 39. Although ulcers generally exhibit themselves upon the inferior extremities, and are there also oftenest feigned or artificially produced, they may, whatever their nature, appear upon other parts of the body. They justify rejection only when their chronic character is well established, and they co-exist with a morbid diathesis. Artificially produced ulcers eventually assume the character of chronic ones, and may, by the lesions they have produced, in like manner justify rejection, for at this stage of their existence it is impossible to distinguish them from spontaneous ones. When factitious ulcers have not deeply altered the surrounding tissues, they can readily be discovered by the following features.

In old ulcers the epidermis is shiny, hairless, and of a violet color, this latter fading by insensible gradations into that of the healthy skin. In recent artificially produced ulcers, the wound is circumscribed, and marked by a distinct circle. Where the party appears in good health, and without emaciation—where the cervical lymphatic ganglions are not enlarged, and where the edges of the ulcer are round and brown, the base red and purplish, and the surrounding tissue inflamed, spotted, or exhibiting blisters, there is presumption of criminal agency in their production, for men suffering from old ulcers are generally cachectic, having the skin dry and scaly; and where the sore has attacked a limb, this often becomes atrophied or œdematous.

Nævi Materni, Erectile Tumors.

§ 40. The former can only justify rejection when sufficiently large to constitute, especially on the face, disgusting hideousness. The latter consisting of vascular tissue, formed in the capillary system of the chorion, and often on the surface of mucous membranes in the vicinity of natural openings, may justify rejection, if extensive, and situated on such parts of the body as are exposed to blows or habitual pressure.

Cicatrices.

§ 41. All extensive, irregular, unyielding cicatrices, causing notable changes in the relations of parts, uniting contiguous organs, and interfering with freedom of muscular exercise, justify both rejection and discharge.

Steatomatous Tumors.

§ 42. Moles, warts, or wens of large growth, likewise

justify rejection when present in a region exposed to pressure, and when they interfere with freedom of motion in adjacent parts.

SECTION VII.

DISEASES OF THE CELLULAR TISSUE.

Leanness and Emaciation.

§ 43. Leanness, by itself, is not a cause for rejection, when present in an otherwise sound constitution. But when it attains to the degree of emaciation, and borders on marasmus, it must be considered as a disqualification for military service.

Obesity.

§ 44. Obesity as a general thing justifies rejection, but a mere predisposition to it does not, on the presumption that an active life would interfere with its further development.

Anasarca and Œdema.

§ 45. The former of these conditions is ordinarily symptomatic of visceral disease, and as such requires that the recruit be rejected. When, however, the affection is acute and primitive, no opinion should be hastily pronounced; the party being meanwhile provisionally remanded until time shall decide the question.

Œdema being a local infiltration of the cellular tissue likewise dependent on visceral disease, derives all its

importance from the character of the organ primarily affected. When primitive in its nature, and arising from merely accidental causes, as for example sudden cold, it is without importance. The source of its origin must determine the question of disability.

Abscesses.

§ 46. **Acute Abscesses** justify rejection only when extensive, producing exhaustion, suppuration, and great loss of substance.

Chronic Idiopathic Abscesses, the indicia of a confirmed serofulous diathesis, always justify rejection.

Cold Abscesses, being always symptomatic of grave lesions in deep seated parts, are absolute causes for rejection.

Fatty and Encysted Tumors.

§ 47. The size, extent, and position of these formations, with relation to the pressure likely to be made upon them by clothing and equipments, must determine the question of rejection.

SECTION VIII.

DISEASES OF SEROUS MEMBRANES.

Dropsy.

§ 48. Dropsy, situated in any of the splanchnic cavities, always requires that the reeruit be rejected. Discharges are to be granted only after treatment has proved unavailing.

SECTION IX.

DISEASES OF THE ARTERIES.

Aneurism.

§ 49. Aneurisms, which are tumors formed by arterial blood, consist either in a dilatation of the walls of an artery without rupture (*true aneurism*), or dilatation with rupture and escape of blood into adjacent tissues (*false or diffused, circumscribed aneurism*), or passage of the blood from an open artery into a vein (aneurismal varix). Either of these conditions is a cause for rejection. When declaring itself in soldiers, it is equally a cause for discharge.

SECTION X.

DISEASES OF THE LYMPHATIC SYSTEM.

§ 50. Dilatation of the lymphatic vessels is occasionally met with, and requires rejection whenever it is extensive.

Angiolocutis.

§ 51. Inflammation of the lymphatic vessels is not a serious affection in its acute stage, and is not a disqualification for military service. In its chronic stage it is extremely rare, and its symptoms obscure, yet when discovered to exist, is a cause for rejection.

Lymphatic Adenitis.

§ 52. Acute adenitis, usually running its course in a

few days, is not in general a cause for rejection. If, however, it be considerable, it may produce extensive detachment of parts, fistulas, &c., requiring a long period for recovery, and consequently disables the party for military service. In each case the judgment of the surgeon must be exercised in arriving at a conclusion. Chronic adenitis is often evidence of constitutional disease in itself justifying rejection.

SECTION XI.

DISEASES OF THE NERVOUS SYSTEM.

Paralysis.

§ 53. This affection, which is easily feigned, may be restricted to one limb, to a few muscles, or it may extend over a large portion of the body, as in *hemiplegia* and *paraplegia*.

When it involves any considerable portion of the muscular system, there is always to be noticed flaccidity and flabbiness of the flesh, with, often, a beginning of atrophy, discoloration of the skin, weakness of the articulations, and more or less alteration of the sensibility. The normal temperature is ordinarily lowered in a paralyzed part, and the general physiognomy of paralysis is such that it cannot be counterfeited, so as to deceive a practised eye. This is particularly the case in *hemiplegia* and *paraplegia*, affections referable for their origin to the brain and spinal marrow. In cases of suspected feigning, the truth may be discovered by employing either surprises or painful applications borrowed from the class of

remedial agents proper to the treatment of real paralysis, as for example the cold douche.

In making a diagnosis, it is necessary to distinguish between paralysis of the nerves of sensation and those of motion. Unexpected wounding of the former will readily expose deception, and paralyzes of central origin are accompanied by general symptoms which cannot be imitated. It is otherwise with feigned paralysis of the motor nerves, which is extremely difficult to detect. The keenest observation and scrutiny will here be required.

Lead Paralysis.

§ 54. Under the influence of emanations from lead, and consequently in those professions in which this metal is used, artisans are exposed to a form of paralysis which exhibits itself in different muscles of the trunk and extremities, with this characteristic feature, viz.: that only a certain number of muscles are affected. Although the paralysis may be incomplete, as regards the whole limb, it is always complete as regards the muscles involved in it. The extensors are those which most generally suffer. The limbs remain in a semi-flexed position (as for example, the hand upon the fore-arm), the patient not being able to extend them without assistance from another limb, or by pressure against some solid body. Inquiries into the vocation of the individual, and particularly as to whether he had ever suffered an attack of lead-colic, a symptom nearly always preceding this form of paralysis, will serve greatly to illumine the judgment of the surgeon. Besides which, the peculiar diathesis which accompanies such cases—the blue line on the edge of the gums, spots on the mucous membrane,

with occasional aneurotic complications, and the visible impairment in the function of nutrition, leave little room for doubt. Rejection follows of necessity.

Paralysis from Fatty Degeneration.

§ 55. Paralysis may result from fatty degeneration of the muscles, producing insensibility to the influences of the nervous fluid, and deformity, or deviation of the limbs.

Traumatic Paralysis.

§ 56. The diagnosis of this form of paralysis is extremely difficult. In such cases, the parts must be critically explored for scars or deformities, and to discover whether any important nerve has been wounded, and thus afford some anatomical reason for the paralysis. The patient must also be questioned in relation to the connection between these two circumstances. It must not be forgotten that traumatic paralysis, as well as that arising from internal or spontaneous causes, gives rise, when prolonged, to marked changes in the nutrition of the affected parts, and that the absence of these indicia creates a just suspicion of simulation.

General Progressive Paralysis.

§ 57. General progressive paralysis manifests itself through enfeeblement of the muscular system, increasing difficulty of articulation, tremor of the limbs, and atrophy of the muscles. These phenomena, originally insidious in their inception, progress steadily until at a later stage the muscles of organic life participate in the general paralysis. This condition, which cannot be feigned, necessitates rejection.

Habitual Tremor.

§ 58. Emanations from lead as well as mercury, producing a real lead or mercurial poisoning in those constantly exposed to them, frequently give rise to *partial* or *general* tremor. This constitutional condition, denoting, as it does, lesion in some of the nervous centres, always disqualifies its subjects for military service. It is rare that this state can be feigned with any success, because of the characteristic features of the affection. The muscular spasms which it occasions are short, irregular, in a word, clonic; any attempt at flexion of a limb being preceded by short snatches of unsuccessful effort, occasioning tremor and involuntary agitation. Wherever there is suspicion of simulation, close questioning must be resorted to.

Partial Atrophy.

§ 59. The same rule as to rejection, applies to partial atrophy of the muscular system, with or without fatty degeneration, unless the atrophy, united to unimpaired constitutional vigor, is inextensive and confined to muscles of secondary importance.

Permanent Contractions.

§ 60. Permanent contractions, rigidity, and shortening of certain muscles, with diminution or loss of their normal extensibility, occasions sometimes flexion, and more rarely permanent extension of a limb. Such states are always disqualification for military service. Contractions of the neck, spinal column, and limbs, are often feigned, which facts reveal themselves whenever, although alleged to be of ancient date, no emaciation of the involved tissues presents itself. *Essential contrac-*

tion, better known as *intermittent tetanus*, is of such difficult diagnosis as often to escape observation; the short time allowed the surgeon for examination not affording sufficient opportunity for the complete study of a disease but recently known. It is always a cause for rejection or discharge.

Neuroma.

§ 61. These painful pisiform tumors, seated in the subcutaneous nervous twigs, are always a cause for rejection when they can be detected externally.

SECTION XII.

DISEASES OF MUSCLES, TENDONS AND THEIR SHEATHS.

Rupture of Muscles, (*coup de fouet*).

§ 62. Simple rupture of muscular fibres is generally inconsequential in its results, and affords no cause for rejection.

Retraction and Rupture of Tendons.

§ 63. *Retractions and ruptures* of tendons modify the anatomical relations of the muscles to which they are attached, exercise an energetic action upon the direction of bones, and produce more or less obstacle to the freedom of motion. In such cases exemption must be granted.

Affections of Tendinous Ganglia.

§ 64. Inflammation and dropsy of tendinous ganglia,

vary in gravity according to their extent and seat. The surgeon will determine whether or not they entitle to rejection by their degree, and the changes they have wrought in parts.

SECTION XIII.

OSSEOUS SYSTEM.

Diseases of Bones and their Articulations.

§ 65. The bones are subject to many forms of lesion and alteration, which may be briefly enumerated as follows, viz :

1st. Such as are incurable.

2d. Such as, though variable in character and more or less curable, are, like the former, causes of absolute disability for military service.

3d. Such as furnish only probable causes for either rejection or discharge.

Incurable Affections.

§ 66. Foremost among these may be enumerated *rachitic curvatures*, *alterations* in shape or *shortening* of the long bones, *spina ventosa*, *osteo-sarcoma*, *false articulations* arising from un-united fractures or ill-reduced luxations, articular distentions arising from violent sprains, luxations or relaxations of capsular ligaments, and complete or partial *ankylosis* of important articulations.

In this connection it is well to remark that partial ankylosis is often feigned. When real, the *shape* of

the joint most generally reveals traces of the inflammation, wounds, or fractures it has suffered, phenomena not observable in simulated cases. In true ankylosis, motion which is free within the limits described by the lesion, ceases suddenly when beyond them, as though met by an inert, hard obstacle, and without any intervention of muscular opposition. Auscultation during motion often detects a characteristic shock when the limit is reached. Motion is not painful, nor does its extent ever vary. Malingerers generally complain of pain on motion. They stiffen the limb, arrest its motion at different angles, and by contraction of its muscles, easily perceived through their hardness and the tense state of their tendons, disclose the simulation they are practising.

INFIRMITIES OF THE SECOND CLASS.

Necrosis and Caries.

§ 67. *Necrosis and caries, fistulas* arising from bony cavities, the substance of bones, or from articulations; *chronic enlargements, white swellings*, hyarthrosis, and *floating cartilages* in joints.

INFIRMITIES OF THE THIRD CLASS.

Periostosis and Exostosis.

§ 68. Neither of these affections, whether of idiopathic or traumatic origin, necessarily justify rejection, unless they are so situated as to be painfully compressed during decubitus, or to hinder the motion of parts. When dependent upon syphilis they usually occupy by preference certain localities which readily distinguish them from those of different origin.

SECTION XIV.

PATHOLOGY OF REGIONS.

Diseases of the Scalp—Tinea Capitis and its Varieties.

§ 69. These diseases being all more or less related to a cachectic habit of body, must be considered as so many exponents of an impaired constitution. They will justify rejection or discharge whenever it is manifest from their gravity, that the source of their origin is incurably contaminated, as well as on account of their contagiousness. Chronic *tinea, favosa*, and *scutulata*, always justify rejection or discharge. *Tinea furfuracea*, when slight, does not.

Eczema and Impetigo.

§ 70. These diseases are often feigned by the application of irritants to the scalp. But the fraud is easily detected in such cases, since the characteristic odor of the disease is wanting, the crusts are not depressed, and when detached, a healthy circumscribed wound with an inflammatory areola is seen, the other portions of the scalp being sound.

When these diseases are attempted to be concealed, they may still be detected, after thoroughly cleansing the head, by the hot, humid feeling of the scalp; and if the hair be separated, erosions more or less deep, and other indicia of vesicular inflammation, will be discovered. Examination of the scalp by the eye and touch should never be omitted.

Baldness.

§ 71. Extensive baldness requires, on many accounts,

that the recruit should be rejected. Whenever this takes place naturally, the denuded surface is smooth, shining, and of a white or yellowish tinge. The utmost scrutiny fails to detect the bluish points corresponding to the openings of the hair-bulbs. Sometimes superficial cicatrices of various size resulting from the effects of *favus* may be noted. Whenever artificial means have been employed to produce baldness, however carefully the operation may have been performed, the tegument of the scalp will never wear the appearance described above. Its surface, on the contrary, has a dull, unvarnished look, like the rest of the skin, and on a critical examination, the openings of the hair-bulbs are plainly discernible.

Passing the hand over the head, will never fail to detect the existence of artificial appliances, if any are attached to the surface of the scalp.

Tumors.

§ 72. *Wens, erectile, fibrous, and fungous* tumors, scrofulous abscesses, abscesses by congestion, are all causes for rejection on account of the impediment they present to, or the pain which they cause in wearing the military head-dress. The same rule will not apply to *acute* abscesses, unless they are of great size; nor to tumors resulting from simple contusions, and curable in a few days.

Cicatrices.

§ 73. Extensive, irregular, and slightly consolidated cicatrices, occupying a large surface of the scalp, may, for the reasons given above, justify rejection.

SECTION XV.

DISEASES OF THE SKULL.

Want of Development and Malconformation.

§ 74. Size being generally a measure of power, an exceedingly small or deformed skull, limiting the mass of the brain, becomes, inferentially, an index of feeble intelligence. The apparent *volume* of the brain, rather than the *shape* of the skull, should guide the surgeon in this matter, which, after all, becomes important only when there is marked vicious conformation of the latter.

Incomplete Ossification.

§ 75. Incomplete ossification of the skull is revealed through the persistence of the fronto-parietal fontanelle, or sometimes by the non-union, mobility, and elastic depressibility of the edges of the bones. It is always a disqualification for the military service.

Fractures and Loss of Substance.

§ 76. Old fractures, although perfectly healed, when they leave any predisposition to disease, are absolute causes for rejection.

Loss of substance of any of the bones, arising either from wounds, trephining, caries, or necrosis, is also a disqualification for military service.

Tumors.

§ 77. Certain fungous tumors, having their origin in the bones of the skull, and appearing prominently beneath the scalp, are generally causes for rejection, unless

they are so small and benign in character as to provoke no inconvenience. But when these tumors are evidently seated beneath the external table, they are absolute disqualifications for military service.

SECTION XVI.

DISEASES OF THE ENCEPHALON AND NERVOUS SYSTEM.

§ 78. The difficulty of discovering many anomalous conditions of the brain, which are just causes of disqualification in a recruit, and yet are unrevealed, except through the instrumentality of organs largely controlled by the will, renders this department of observation one in which *feigning* can be undertaken with many chances of success. Although public report generally stigmatizes the mentally degraded with a species of notoriety, yet the surgeon may have no means of ascertaining this, and must, therefore, resort to such physical signs as are revealed through the physiognomy, shape of the head, general demeanor, and conversation.

Idiocy.

§ 79. Idiocy, which is a congenital deficiency of mind, is generally marked by a peculiar type of expression which cannot be mistaken. This is particularly the case when the deficiency exists in the highest degree. Both this state and its minor condition, termed imbecility, are disqualifications for military service.

Mania and Dementia.

§ 80. Mania* manifests itself under a variety of forms, which it must suffice only to name in this connection. Thus *melancholia*, *monomania*, including under this latter homicidal and suicidal mania; kleptomania, erotomania, &c., &c., are all varieties of the same disorder.

Dementia, on the other hand, or as it has well been termed, "the tomb of the human reason," is the last stage of degradation into which a mind, originally developed, can fall. It is the opposite pole to idiocy, which is always congenital, while dementia is acquired.

The delicate shades of mental aberration, observed in the varieties of mania, are at times of such difficult recognition, that a most assiduous and prolonged examination, frequently repeated, is necessary to enable the physician to arrive at any opinion in the premises. In many cases the symptoms are so manifest and out-spoken as to leave no doubt of the presence or character of the disorder. But in the majority of cases, and where no adequate time is allowed for examination, the surgeon will find himself laboring under great perplexity. The only general rules of examination which can be given for such cases are these: To converse with the suspected party on general subjects, rapidly passing from one class to another, and suggesting in particular such as are mutually incompatible, and doing this in such a way as not to give time for the preparation of special answers; to seize upon any word which escapes him, and seems to have anticipated reflection, and by surprising him,

* Mania, in some of its many forms, has been the chosen disease of simulators in all ages. That royal malingerer, the crafty Ulysses, feigned it in order to avoid going to the siege of Troy. King David, Junius Brutus, and Solon also practised this deception for various purposes.

possibly secure a self-contradiction. At the same time the physiognomy, gestures, and demeanor, style of clothing and appearance are all to be studied, in order to ascertain whether they agree or disagree with the conditions of mind in which he is suspected to be. Observation made of him while engaged in conversation with others, sometimes concealing from him the object of these interviews, and sometimes again revealing it to him, will all contribute something to the data upon which the surgeon is to found his opinion.

There is, generally speaking, a marked difference between the truly insane man and the simulator, while undergoing an examination, whose character and object he is informed of. The truly insane, on such occasions, feels hurt at the imputation cast upon his sanity, and makes desperate efforts to appear well and answer correctly; while the simulator does not repel with equal force the imputation of insanity, and generally overacts the symptoms which he supposes belong to this condition of mind. The patient should unexpectedly be examined at night, and on different occasions, in order to ascertain the condition of his sleep. Yet too much stress is occasionally laid upon insomnolence, as one of the characteristic symptoms of insanity. This condition belongs more particularly to *mania*, in which disease patients always suffer from broken, feverish, and interrupted slumbers,* while in the false maniac there is true sleep, resulting from the exhaustion produced by a day of feigned agitation; and in proportion as the

* It is well to bear in mind the distinction between *sleep* and *slumber*. As a general rule, the insane never *sleep* soundly. But as a class, they all *slumber* more or less.

symptoms feigned have been tumultuous and exhaustive, will the sleep be profound.

In *dementia*, on the contrary, sleep is both profound and long, sometimes even absorbing a large portion of the day.

In *monomania*, sleep is generally broken or disturbed by hallucinations, and the patient in this state talks to himself and reveals the subject of his hallucination, which when awake he was studious to conceal. Among other objective symptoms of insanity, may be enumerated, neglect or eccentricity in dress, personal uncleanness, a peculiar mousy smell, irregularity of appetite, alternations of excitement and depression, insensibility to vicissitudes of temperature. An inquiry into the history of the family, and the previous mode of life (habits, occupation, tastes and diseases, or accidents) of the patient, should also be made.

Epilepsy.

§ 81. The foregoing rules will apply with equal force to epilepsy, an intermittent disease of the brain, which is always a disqualification for military service.

The epileptic paroxysm is ushered in by a sudden loss of sensibility and consciousness, and a perversion of action in the muscles ordinarily under the control of the will. This perversion takes the form of clonic spasms, exhibiting violent and irregular contractions and extensions, accompanied by other unmistakable symptoms, which we shall presently describe.

The following differential diagnosis of *real* and *feigned* epilepsy will enable us to review, step by step, the course of the true disease; as well as the deviations therefrom, consequent upon simulation.

A. In real epilepsy, the paroxysm occurs *anywhere*, and the patient falls indiscriminately from heights, into water, the fire, on rocks, pavements, or the ground; while the simulator always selects some opportune time or place, so as to avoid injuring himself. Flexion of the thumbs upon the palms is one of the first symptoms to occur.

B. In real epilepsy, there is *an absolute loss of sensibility, with dilatation and immobility of the pupil*. Other phenomena present themselves with different degrees of distinctness, which, although unessential when considered separately, are yet of value in proportion as they approximate in resemblance.

C. In real epilepsy, the pupils remain immovable, while in the feigned disease, despite convulsions and contortions, the pupils always contract when a ray of bright light is thrown in upon them. In the true disease, the eyes are sometimes half-open, exhibiting only the sclerotica, and there is a convulsive twitching of the lids. At other times the eyes are wide open, with a vacant, haggard stare. This is the usual condition, towards the end of a paroxysm.

D. In real epilepsy, so complete is insensibility that neither the loudest sounds, nor the most penetrating and irritating odors, like ammonia and burning sulphur, nor tickling the soles of the feet, nor even cauterizing the surface, can provoke any sensation.

The foregoing operations generally suffice to evoke in simulators symptoms of painful perception, which at once reveal their deception. Even the threat, and the preparation of the actual cautery, made within their hearing, has sufficed sometimes to unmask simulation.

E. Among the accessory symptoms of real epilepsy are a red, bloated, contorted face, foaming at the mouth, and the state of the tongue—sometimes thrust out, sometimes seized between and bitten by the teeth. The appearance of the countenance cannot be imitated; foam produced by a piece of soap under the tongue is easily detected; and while thrusting out the tongue may be imitated, simulators are not apt to wound it. Again, in the true disease, respiration is embarrassed, the heart palpitates violently, the veins swell, and the pulse is small, feeble, and irregular; while in simulators it is full, quick, and bounding.

Again, in the true disease, the *thumbs* and wrists are flexed; if these are once extended, they remain so; while in simulators, these parts are no sooner extended than, as soon as pressure is removed, they flex them anew. In true epilepsy the skin is *clammy and cold*, in feigned cases it is hot.

F. At the termination of a true attack, the face loses its lividity, turns pale, wears a vacant, stupid look, while stertorous breathing sets in at the same time. The pulse falls and becomes regular, respiration returns to its normal state, the patient pronounces some words with evident ignorance of what has transpired, complaining of headache, general fatigue, and finally recovers his senses with an imperious desire to sleep.

The surgeon should not allow himself to be deceived by either the force, violence, or duration of the convulsions, which malingerers will often prolong beyond the time usual in the true disease.

G. As the surgeon is not always present during attacks of epilepsy, he must analyze the external appearance of those in whom the disease is alleged or *sus-*

pected to exist, in order to discover such marks as it usually impresses upon the system, when become chronic.

In *chronic* epilepsy there may often be discovered some evidence of traumatic lesion, together with a special expression of countenance presenting one or more of the following features, viz.: timidity, shame, sadness, or stupidity. The upper eyelids droop, the head generally leans to one side or forward, the skin of the face is waxy and wrinkled, the pupils dilated, the voice husky, the veins swelled, the nostrils enlarged, the lips thickened, and the edges of both upper and lower incisors worn obliquely on corresponding sides.

After an attack of epilepsy, there will often be found contusions, and even wounds, made by the patient falling against something, or striking himself; and the tongue often shows traces of having been bitten, while the teeth are occasionally found injured.

H. Cold douches to the face, the introduction of snuff into the nostrils, and tickling either these or the soles of the feet, always produce manifestations of sensation in malingerers.

Whenever an application for a discharge on the ground of epilepsy is made, the soldier should be sent to the hospital for observation. The surgeon, or his assistants, can there easily satisfy themselves of the existence or simulation of the disease.

Epilepsy can also be concealed by a recruit, when it has as yet left no permanent marks upon the system. In such case the surgeon must seek elsewhere, than in the man himself, for proof of its existence, and public report is the best source to which to apply.

Alcoholic epilepsy, common among the intemperate,

is curable by proper treatment, and merits no special notice in this connection.*

Epileptic Vertigo.

§ 82. This is a modified form of epilepsy, in which the paroxysm is marked neither by convulsions, swelling of the face, nor foaming at the mouth. It consists in a sudden loss of sensation and consciousness, fixed stare with involuntary flow of saliva, muscular relaxation, with falling, or simply vacillation of the body. After the attack, which lasts only a few minutes, the patient resumes his occupations, unconscious of what has occurred. This form of epilepsy, which predisposes to grave lesions of the intellectual faculties, requires likewise that the recruit should be rejected and the soldier discharged.

* Percy and Laurent (Dict. des Sciences Medicales) mention the case of a Parisian beggar who was in the habit of feigning epilepsy, in order to provoke the sympathy of passers-by, and thus obtain their alms. The police suspecting the cheat, however, caused a straw bed to be placed near him, upon which, when the fit was next feigned, he threw himself in violent contortions; fire was thereupon immediately applied to each corner, when the beggar sprang to his feet, and ran away!

Another instance related by them, occurred in a young cavalry soldier, who feigned the disease so well, that even Percy was for awhile deceived. The foaming at the mouth, flexion of the thumbs, and insensibility were capitally counterfeited, and a discharge was about being granted; when the distinguished surgeon determined to make one trial, and this a crucial one, of the reality of the disease. Accordingly, the next time the fit came on, he approached the subject, examined him carefully, and then in a loud voice ordered the farrier to heat quickly a horse-shoe red-hot, and apply it to the patient's posteriors. The moment the farrier was seen coming with his pineers and horseshoe in hand, and the assistants proceeded to take down the man's trousers, the better to apply this new argument *a posteriori*, the simulator rose upon his knees and confessed his fraud. He afterwards related to Baron Percy that his father had taught him the art of simulation, in which it would seem he had himself nearly become an adept.

Catalepsy.

§ 83. This is an intermittent disease of extreme rarity, and, like epilepsy, returns at irregular intervals. Its usual symptoms are a sudden loss of sensation and consciousness, with rigidity of the muscles; so that the body and limbs retain during the entire paroxysm the position they had at its invasion. It is easy to ascertain loss of sensation by the cold douche, prickings, and irritants. Muscular rigidity can, to a certain degree, be simulated, but it always wants that complete stiffness which is observed among most cataleptics. When the paroxysm is witnessed by the surgeon, he cannot long remain in doubt as to its real or feigned character; but in the absence of ocular proofs, public report must be questioned upon the subject. When the existence of this disease is fully established, in either a recruit or a soldier, rejection or discharge must follow.

Somnambulism.

§ 84. There are no objective symptoms short of ocular proof, by which surgeons can distinguish the existence of this peculiar habit. But when it is proved to be chronic, and of frequent recurrence in an individual, he should be rejected or discharged.

Chorea.

§ 85. Chorea consists in an irregular and involuntary movement of one or more muscles, or, in fact, of the whole muscular system. It is quite a common affection, is not easily feigned, and when exhibited in a chronic form in an adult, unfits him for the military service.

Barking, is a correlated manifestation of chorea, which results from a spasm of the levator muscles of the larynx

and the diaphragm. This condition can only be imitated by the visible concurrence of all the respiratory muscles. True barking often continues for several days ; when feigned, it is not prolonged beyond a few hours, as exhaustion compels the discovery of the cheat.

Delirium Tremens.

§ 86. This disease, which requires no description, is only a disqualification for the military service, when its attacks have been repeated, when the subject of them is still addicted to indulgence in intoxicating drinks, and when, from his age, there is little hope of reforming him, or re-establishing his health.

Nostalgia.

§ 87. Nostalgia, or *home-sickness*, although not in itself a disease, is yet a predisposing cause to diseases of a most serious character. It has no connection with *recruiting*, and gives rise only to the question of a discharge among soldiers already in the service. Most authors are agreed in recognizing three distinct stages.

A. The first stage, marked by sadness, unrest, taciturnity, and moodiness, with lassitude and debility, and a disposition to abstraction of mind and revery.

B. In the second stage, the eyes are red, swelled, and haggard ; deep sighs are emitted, and involuntary tears shed. The complexion becomes wan, appetite fails, digestion is languid ; both secretions and excretions are impaired ; perspiration diminishes ; headache sets in ; the sleep is disturbed by dreams of home ; respiration becomes embarrassed, the skin dry, and the pulse soft and languid. Towards night fever supervenes, strength

diminishes, emaciation comes on, and with it the intellectual faculties become degraded and extinguished.

C. In the third stage, all the foregoing symptoms become intensified. There is insomnolence, stupor, delirium, prostration, fever, colliquative diarrhœa, and marasmus finally closes the scene.

In its early stages, a furlough, judiciously granted, will often suffice to restore the moral vigor of the young soldier. But when it has long resisted treatment, and gone so far as to produce sensible external lesions, such as emaciation, or structural changes in large organs, a discharge must, unquestionably, be granted.

SECTION XVII.

DISEASES OF THE EARS.

§ 88. Perfect hearing being essential to the discharge of the duties of a soldier, the surgeon will give particular care to the examination of the ears of the recruit.

Loss of the Pavilion of the Ear.

§ 89. Hearing is generally imperfect in persons who have lost the whole or a part of the pavilion of the ear (the office performed by this being to collect the waves of sound, and to direct them towards the external meatus). Nevertheless, there are exceptions to this rule; and cases have been known in which individuals, losing the entire pavilion, have still retained their hearing unimpaired. Still, as a deformity, this accident requires the rejection of the *recruit*, although when it

occurs in a *soldier*, and is accompanied by no sensible impairment of hearing, it affords no sufficient ground for a compulsory discharge.

Atrophy, Hypertrophy, &c.

§ 90. Atrophy, or its opposite hypertrophy, extensive tumors, ulcers, chronic eczema, or adherence to the skull, of the pavilion, are always causes for rejecting a recruit, on account either of the impairment of hearing they produce, the obstacles they present to the head-dress, or the possible dangers they give rise to from aggravation. The same rule applies to soldiers asking a discharge, whenever these disorders are such as to baffle surgical skill.

External Meatus.

§ 91. The meatus auditorius, in its normal state, being oblique within and forward, and describing a curve, whose convexity is upwards, it becomes necessary, in order to explore it, to examine the ear under a bright light (sunlight is preferable), at the same time pulling the pavilion backward, to straighten the curve of the duct. In placing the eye directly before the opening, it is nearly always possible to see the tympanum, which presents an oblique and pearly surface. This examination can be made much more thoroughly with the *speculum auris*.

Obliteration, &c.

§ 92. Complete obliteration, contraction or deviation of the meatus, and fungous growths in its cavity, are lesions which justify the rejection of a recruit, or the discharge of a soldier. They cannot be feigned.

Polypi.

§ 93. Polypi of the external meatus, when deeply seated, are always disqualifications for military service, owing to the uncertainty which attends their treatment. Among soldiers, if they are small, have a slight pedicle, and are situated at the external orifice of the meatus, they can be extirpated, and unless they show a disposition to return, afford no necessary cause for a discharge. But in contrary conditions they are ineradicable, and form an absolute disqualification.

Foreign Bodies.

§ 94. Foreign and inoffensive bodies often find their way into the external meatus, remain there undiscovered by the person, and thus interfere with hearing by directly preventing the passage of sonorous vibrations. The accumulation of wax (*cerumen*) often occasions a similar result. Both the obstacle and the deafness, consequent upon it, can be easily removed.

Peas, elder-pith, pieces of bread-crumbs, and other analogous bodies, surreptitiously introduced into the meatus, have been alleged as morbid growths, occasioning incurable obstructions, and, in consequence, deafness. But a critical examination of the passage will not fail to disclose the cheat. In the first place, the auditory duct is free and healthy up to the obstacle perceived, and an instrument striking upon this meets with nothing like an organic resistance. When pricked, no blood flows; when pressed, it sinks farther in, without any apparent resistance from a point of attachment, and, finally, a simple manipulation with the forceps, or a stream of warm water, insures its removal.

Perforation of the Tympanum.

§ 95. Perforation of the tympanum is shown by the blowing of air through the ear, when the nostrils and mouth are closed, during expiration. This condition does not necessarily produce deafness. Nevertheless, and although the hearing may still be good, it is best to reject the recruit, because perforation being always the result of violent inflammation or injury of the internal ear, and air being constantly admitted into its cavity, predisposes it to recurrent inflammations.

Among soldiers perforation of the tympanum does not necessarily justify a discharge, unless deafness has ensued, or other accidents due to inflammation of the internal ear.

The Middle Ear—Obstruction, Contraction, Obliteration.

§ 96. Obstruction, contraction, or obliteration of the eustachian tube, due either to inflammation, enlargement of adjoining parts, or hypertrophy of the tonsils, often produces impairment or loss of hearing. These alterations of structure can only be ascertained by sounding the tube or carefully examining the back part of the mouth. By reason of the uncertainty attending their treatment, they always require that the recruit should be rejected. But in soldiers it is always well to subject them to special treatment, in order to determine the curability or incurability of the disorder, before venturing to give a discharge.

The Internal Ear.

§ 97. Affections of the internal ear, such as acute or chronic otitis of the cavity of the tympanum, diseases

of the small bones, inflammation of the cellular tissue and of the periosteum of the cavity of the tympanum, are only appreciable by rational symptoms ; their seat excluding all direct means of observation.

Acute Otitis.

§ 98. Acute otitis reveals itself by dull, and at times pulsative pains, accompanied by uncomfortable humming and ringing in the ears. These pains extend either in the direction of the external ear or the eustachian tube ; in the first instance, the patient instinctively seeks to compress the ear with his hand ; in the second, a painful sensibility is experienced in the pharynx, which incommodes deglutition. These local manifestations soon become general, and are accompanied by headache, vertigo, fever, and insomnolence. To these conditions is usually added temporary deafness, of a more or less marked character. This disease, which is entirely amenable to treatment, does not justify the rejection of a recruit, unless its symptoms are of great intensity. Nor does it afford ground for a discharge in soldiers, since, when properly treated, it would either cease or pass into the chronic state.

Chronic Otitis.

§ 99. Chronic inflammation of the cavity of the tympanum, which may or may not follow the acute form of that disease, is particularly observed among persons subjected to constant humidity, such as the inhabitants of maritime countries, as also among lymphatic temperaments and those predisposed to scrofula. It produces an imperfect deafness, of variable intensity, and which appears to be controlled by atmospheric influences.

The patient hears better in dry than in wet weather, and his hearing is also affected according as the congestion of the tissues, together with the effusion of fluids, prevents the circulation of air between the eustachian tube and the cavity of the tympanum. The transparency of the drum is also often diminished.

In cases of this kind, and wherever it is evident that the phenomena described above are not the product of attempts at simulation, it is best to reject the recruit. While in soldiers if, after having undergone proper treatment, the disease still continues incurable, a discharge should be granted.

Purulent Discharges.

§ 100. When purulent discharges are solely confined to the external meatus, no cause for rejection presents itself; since it is generally a temporary affection, and often consecutive to typhoid fever or scarlatina. Nor would it justify a discharge, unless it had obstinately resisted all treatment. Purulent discharge from the external meatus is distinguished from that coming from the internal ear, by the absence of all signs of perforation of the tympanum (blowing air from the ear). But if the eustachian tube is either obliterated or obstructed, no air will escape and the origin of the discharge cannot be ascertained through this channel. In such cases we must explore the external ear with great care, employing at the same time the speculum or forceps.

Purulent discharges are sometimes feigned, by the introduction of honey into the external ear, of the greenish juice of herbs, and of tallow mixed with assafœtida, or old cheese; but each of these substances has a special fœtor which differs essentially from that of the pus—al-

ways strong smelling in itself—which the ears secrete. Sometimes pus itself is introduced, but this is easily detected by syringing the ear with warm water and afterwards wiping it dry.

A true purulent, fetid discharge is sometimes the result of an artificially produced otitis, through the action of topical irritants. It is of course difficult to obtain proof of this fact; but the simulator generally pays the penalty due to such deception, by the permanent injury entailed upon himself.

Purulent discharges may also be concealed by cleansing the external ear, just previous to the surgeon's examination. But in this case the appearance of the duct is white, humid, and as it were macerated and wholly deprived of wax; while in a state of health, it is always dry, yellowish-looking, and coated more or less with yellow or brownish wax of marked consistency.

Suppuration of the Mastoideal Cells.

§ 101. The mastoideal cells may be the seat of diffusive suppuration, arising from caries of the petrous portion of the temporal bone. In such case the integuments are œdematous, forming a hard, incompressible tumor which sometimes crackles under pressure. This formation adds to the severe pain usually present. This is a somewhat rare affection; but, being always serious in character, disqualifies a person absolutely for the military service.

Deafness.

§ 102. Deafness may result from various structural alterations, not discoverable on examination, or from a simple nervous affection without any visible alteration of

parts. But long-subsisting deafness and the suspension of the relations to which hearing gives rise, impress upon the general appearance of the individual very characteristic signs. The truly deaf, whose intelligence is not at the same time impaired, exhibits in his features, in the expression of his countenance, and of his eyes a sort of interrogative attention which seeks to penetrate, through the motion of the speaker's lips, what is said to him. This demeanor, of difficult simulation, does not always exhibit itself to an equal degree; but it is always in contrast with the dull and stupid air assumed by the simulator, and which should always awaken attention.

The explosion of a percussion-cap or a simple clapping of the hands suffice to awaken the simulator. Threats, or harsh words, will induce either the pallor of fear in his countenance, or the glow of suppressed anger. No general method for surprising him can be given. The circumstances of each case must stimulate the sagacity of the surgeon and furnish him with the readiest means. As a rule the simplest expedients are the best, being the ones least expected by simulators. *Congenital* deafness is necessarily accompanied by dumbness, a fact to which the physiognomy of the person and public report generally certify. Yet deafness is one of those disqualifications for a soldier's life which is very often feigned. The belief that it only requires perfect self-control, that the structural changes of which it may be the result are deep-seated and inaccessible to exploration, lead men to undertake that which they conceive the surgeon has no means of confuting. And as a fact it must be confessed, that these cases often occasion great embarrassment. Still, they must be explored whenever

suspected, relying upon the ability of science to triumph in the end over deceit.

Whenever an alleged deaf man presents himself for examination, the first step to be taken is to thoroughly explore the pavilion of the ear, the opening and whole extent of the auditory duct, the tonsils, the pharynx, and the parts that are adjacent to the arches of the palate. Next ascertain whether any air enters into the cavity of the tympanum, and whether it does not escape through a perforation of this membrane. If in the course of this examination any obliterations, morbid growths, thickening of tissues, or tumors, compressing and obliterating the auditory passages are met with, the cause of the deafness is explained, and the recruit must be rejected. The same rule obtains when perforation of the tympanum is discovered (§ 95). It is safe to suspect a deaf man who asserts that he can hear nothing in however high a key, and however closely he is addressed.

In calling away attention from himself and gradually lowering the voice, proofs of modified hearing are often discovered. The vocation pursued by the person, will give an indirect clue to the real degree of hearing enjoyed by him. It must not be forgotten, in this connection, that a man may be deaf, and yet be able to perceive, by the shock imparted to the floor, the fall of a body near him, or perceive very shrill sounds, like those of a bell, while perfectly unable to hear loud and deep sounds. There are degrees too, in deafness, which must not be overlooked. By inquiring into the history of the recruit, proofs outside of physical exploration can thus be easily obtained of his infirmity.

Among soldiers applying for a discharge, it will be the fault of surgeons if they are not subjected to a thor-

ough and prolonged examination, calculated to establish the fact of the disease beyond a doubt, before being declared incapacitated for military service.

Deafness may be concealed, on which account, every recruit should have some words addressed to him in a low tone of voice.*

* Dr. Casper (Handbuch der Gerichtlichen Medicin, tom. 1) gives the two following instances of feigned deafness:—

A female convicted of theft and imprisoned, complained that the dampness of her cell had rendered her deaf. Even when addressed in the loudest tones, she appeared not to hear. Suspecting her veracity, the Doctor pretended to believe her, and to prescribe for the disorder. And on one occasion, while visiting her, exclaimed aloud, "Good Heavens! there is *vermin* here!" and suddenly turning towards the prisoner, said in a very low voice, "Madame, you have a *louse* on your right sleeve!" The woman instantly turned, and examined her right arm, with a motion of evident disgust.

The next instance is that of an old woman who was tried for an assault upon a female with a sickle. The prisoner pretended to be sick, feeble, and completely deaf; and no amount of voice on the part of the Court sufficed to make her understand any thing. Casper was thereupon called in, who, from the bearing of the woman, at once suspected her of feigning. Approaching her ear, he shouted, "You are accused of having grievously wounded Mrs. Lemke." "It's a lie," replied the prisoner. "But," rejoined the Doctor, "Mrs. Lemke would not say so, were it not true; for"—suddenly dropping his voice into a whisper—"you know Mrs. Lemke is not a liar." "*She is a liar,*" exclaimed the prisoner aloud, pushed by the spirit of revenge to gratify her hatred, even at the expense of exposing her own deception.

SECTION XVIII.

DISEASES OF THE FACE.

§ 103. The general aspect of the countenance usually indicates the alterations of which it is the seat. A single glance will often discover organic lesions, which are disqualifications for the military service. Thus, a hectic flush raises a presumption of phthisis; a straw-yellow tinge, that of the cancerous cachexy; while puffiness and infiltration point either to disease of the heart or kidney. Extreme deformity of feature or repulsiveness; atrophy of some portion of the face, or want of symmetry between its sides, may all form causes of rejection. Any thing, in fact, which is calculated to render the soldier uncompanionable or disgusting to his fellows, is a disqualification for the military service, most of whose duties are discharged in common.

Deformities and Exostosis of the Forehead.

§ 104. Excessive protuberance or deformity of the forehead is rare, but when it does occur, always forms a cause for rejection, on account of the obstacle it presents to the soldier's head-dress, which usually consists of some hard, unyielding fabric.

Exostoses seated upon the forehead are also causes for rejection, being for the most part dependent upon a bodily condition, which in itself constitutes a disability. When small, isolated, and situated upon other parts of the face, they are not necessarily causes for rejection.

Mutilations.

§ 105. Mutilations of the face from crushing of its bones, comminuted fractures (arising from attempts at suicide with fire-arms), are causes of accidental deformity, which generally incapacitate for the military service by reason of their extent, the obstacles to eating and speaking they occasion, and the aspect they impart to the physiognomy.

Tumors of various Kinds.

§ 106. The face is often the seat of various kinds of tumors, varieties of cysts (fatty, atheromatous, steatomatous, and bony), and erectile tumors and exostoses seem to select it of preference for their locality. When these affections are extensive, the recruit should be rejected; but when they appear in soldiers, no discharge should be granted until surgical treatment has proved unavailing.

Ulcers of the Face.

§ 107. Extensive ulcers of the face are causes for rejection but not of discharge, until surgical treatment has failed to cure them. But syphilitic ulcers, when not connected with a diseased constitutional habit (cachexy), nor of large size, are by reason of their curability, not a sufficient cause for rejection.

Fistulas.

§ 108. Fistulas of the face other than dental fistulas, are always a cause for rejection.

Cutaneous Diseases.

The face is the seat of many varieties of cutaneous

disease which, when chronic and extensive, or of contagious character, afford a cause for rejection. For example, lupus, sycosis, and cutaneous cancer.

Neuralgia.

§ 109. Facial neuralgia, or *Tic Douloureux* is a cause for rejection, whenever it has left external signs of its effects. When occurring in a soldier, no discharge should be granted until treatment has proved unsuccessful.

Paralysis.

§ 110. Partial paralysis of one side of the face may arise from trivial and temporary causes. The cause being first ascertained, the surgeon can then express a becoming opinion in the premises. Before discharging a soldier on this account resort should be had to treatment, in order to determine the question of its curability.

Facial hemiplegia is often symptomatic of serious cerebral disorder; in which case no doubt can be entertained as to the necessity of a rejection; but it is also frequently inflammatory (railroad paralysis) or syphilitic in character, and being then generally curable, does not justify either rejection or discharge.

SECTION XIX.

DISEASES OF THE EYE.

§ 111. The eyes, no less indispensable to the soldier than the ears, may be the seat of many forms of disease, manifesting themselves either in the ball, the lids, or the

lachrymal passages, and alike disqualifying the recruit for military service. Some of these diseases may be feigned, others artificially produced, or concealed.

The methodical examination of the eye requires for its execution particular conditions. There must be a sufficiency of light, either natural or artificial, to enable the observer to appreciate the external condition of the eye, its size, color, secretions, and the aspect of the pupil.

Touch is also necessary to ascertain the consistence of the organ, which may vary with the health, or to determine whether the eye is natural or artificial.

The examination when made with the unassisted eye should be had under different aspects, viz.: with direct or oblique light, and sometimes with artificial light. Certain instruments also facilitate this examination. A magnifying glass brings into clearer view the external parts, such as the cornea, iris and crystalline lens, while spectacles, either convex or concave, serve to discover the existence of myopia, presbyopia, and hypermetropia.

The ophthalmoscope is indispensable for a critical examination of the internal structure of the eye, and may bring to light forms of disease which cannot otherwise be distinguished.

DISEASES OF THE BALL OF THE EYE.

Mechanical Lesions.

§ 112. Any abnormal conditions of the ball of the eye, either in its position, direction, form, consistence, or in the proportion between its parts, and resulting from disease or external violence, may afford a cause for rejection,

whenever they occasion disturbances of the sight. Such results are often consecutive to mechanical injuries, and vary with each particular case.

Foreign Bodies.

§ 113. The examining surgeon should be careful to scrutinize cases of loss or impairment of sight, said to be due to foreign bodies in the eye. Internal ophthalmia of one eye, due to the presence of a foreign body, such as a fragment of percussion cap, should always constitute a cause for rejection or discharge, particularly if the sight of the fellow-organ be impaired. Extirpation of a sightless and inflamed left eye, may save the fellow-organ and justify the refusal of a discharge.

Exophthalmos.

§ 114. Protrusion of the eye may be congenital or acquired. In such cases the eye is thrust out of its orbit by a cause acting from behind and within, and forms what is known as exophthalmos. This disease may be either idiopathic, or symptomatic of local lesions, or of some general constitutional habit attended with impairment of sight; it always forms a cause for rejection. When it occurs in a soldier, he should first undergo treatment to test its curability, before receiving a discharge.

Atrophy.

§ 115. Atrophy of the eye may result from various structural alterations, and always constitutes a disqualification for military service.

Ophthalmia.

§ 116. A vague term, but generally restricted to in-

inflammatory affections of the ocular and palpebral conjunctiva, and of the tarsal edges. The acute forms of the disease should not of themselves be considered a cause for rejection or discharge. The chronic forms, especially when characterized by granular roughness of the palpebral conjunctiva, or vasculo-nebulous or ulcerated cornea, disqualify the patient for military service. But the examining surgeon must satisfy himself of the genuine character of the lesions, so as to avoid imposture.

Men have been known to present themselves suffering from alleged chronic ophthalmia, in whom the eyelashes had been purposely extracted, and the edges of the lids cantherized. But in such cases a strict watch and the lapse of time will suffice to unmask the deception.

If the means employed by the simulator have been continued for a long time, the lesions induced may be of such a nature as to justify a rejection or discharge. The surgeon will readily discover the agents, chemical or otherwise, employed to produce the disease. Chronic conjunctivitis, accompanied by granular lids, or opacities of the cornea, invariably requires rejection or discharge.

Glaucoma.

§ 117. Glaucoma is generally considered to be a disease of the choroid membrane with serous effusion. When confirmed, its external manifestations are usually well marked by a glassy appearance of the cornea, an unyielding hardness of the eye-ball, as if a billiard ball were beneath the lids, and dilatation of the pupil. The patient suffers more or less pain and sees iridescent hues; an increasing presbyopia and limitation of the

visual field are also very significant. This disease is a cause for rejection and discharge. The ophthalmoscopic appearances are marked, and should be sought for in every case.

Diseases of the Cornea.

§ 118. Conical cornea, extreme prominence or transparent staphyloma of the cornea, which seriously impairs the sight constitutes a disqualification for military service.

Wounds and Foreign Bodies.

§ 119. Wounds of the cornea resulting from external violence, or the presence of a foreign body are of importance according to their effect upon vision.

Keratitis.

§ 120. Whether acute or chronic is always a cause for rejection, since it rarely fails to destroy the transparency of the cornea, and thus to impair sight.

Ulcerations.

§ 121. Ulcers of the cornea are of variable importance, according to their position and depth. If the ulceration be superficial, narrow, and situated out of the field of vision, it is not a disqualification for military service. But if it be deep and extensive, it affords a cause for rejection. Discharges to soldiers should be granted only after treatment has proved unavailing.

Opacities.

§ 122. Opacities upon the cornea afford no cause for rejection, unless situated before the pupil, or accompanied by granular lids.

Staphyloma.

§ 123. Staphyloma of the cornea interfering more or less with vision, and always of doubtful cure, is an absolute cause for rejection or discharge.

Astigmatism.

§ 124. Astigmatism, whether due to aberration in the curve of the cornea or lens, should be a cause of rejection or discharge.

DISEASES OF THE IRIS.**Loss of Color.**

§ 125. The iris at times loses somewhat of its color, or exhibits a difference in color between the two eyes. This state, which is usually congenital, does not generally impair the perfection of vision, except in albinos. Sometimes, however, loss of color in the iris may lead to the suspicion of old iritis. We must then ascertain whether adhesions exist between the iris and lens impairing sight. The mobility of the iris may be ascertained by opening and closing the eyelids in a good light, or by the use of some agent, as belladonna or atropine.

Congenital Fissures.—Lacerations.

§ 126. Congenital fissures of the iris are generally unimportant, but lacerations or perforations require to be considered according to their extent and effects upon vision.

Absence of the Iris.

§ 127. Absence of the iris in either eye, is a cause for rejection.

Atresia.

§ 128. Complete closure of the pupil is a cause for rejection or discharge.

Dilatation of the Pupil.

§ 129. Dilatation of the pupil, when slight, is not incompatible with perfect vision. When excessive and permanent, it affords a cause for rejection. The surgeon should be on his guard against this state, artificially produced by specific substances.

Detachment.

§ 130. The iris may be detached from the ciliary ligament, and thus an artificial pupil be produced. When the detachment is slight, it has no effect upon vision. Sometimes this membrane is caught in a scar of the cornea, producing a condition which may be slight and inconsequential in its effects upon vision, or cause a serious impairment of it. The surgeon must judge of these diversities of effect in forming an opinion.

Tremor of the iris may indicate softening of the vitreous humor or luxation of the crystalline lens, and as it causes a serious impairment of vision, is a disqualification for military service. The ophthalmoscope should be used to assist in deciding the character of a given case, and the vision should be accurately tested for amblyopia.

Iritis.

§ 131. Inflammation of the iris appears under three different forms, viz.: *traumatic*, *syphilitic*, and *rheumatic*, each of which presents characteristic local symptoms. These diseases are all causes for rejection when

they are well marked, not only on account of their intensity, but of their very nature. The syphilitic form, by far the most common, is generally accompanied by constitutional symptoms. It should invariably secure rejection, as it furnishes one of the clearest evidences of constitutional syphilis; it should also induce discharge from service.

Diseases of the Sclerotic.

§ 132. Special diseases of the sclerotic are rare. The only one deserving mention here is a species of atrophy or thinning of this membrane, which is characterized by a dark discoloration, due to the exposure of the pigment color of the choroid. This condition is a disqualification for military service.

Diseases of the Crystalline Lens and of its Capsule.

§ 133. Dislocation of the crystalline lens is of rare occurrence. When present and from whatever cause arising, whether traumatic or spontaneous, whether the lens be opaque or transparent, reducible or irreducible, it is always a cause for rejection or discharge.

Cataract.

§ 134. Cataract, which should always occasion either rejection or discharge, is, when well advanced, appreciable by the naked eye. Yet it may be necessary in certain incipient cases to resort to a magnifying-glass, or to oblique illumination. This last-named operation consists in examining the pupil by artificial light, which has been made to traverse a convex lens of about two inches focus. The observer will find it convenient to stand behind and above the head of the person inspected, so as to get the light reflected from the crystalline lens. By this process

adhesions of the iris to the capsule of the lens may be seen; delicate ulcerations of the cornea, and even foreign bodies, should any happen to be attached to the surface, or entangled in the substance of the cornea, may also be detected. No examination for cataract can be complete, however, without the use of the ophthalmoscope, the pupil having been previously dilated by belladonna or atropine.

Diseases of the Internal Parts of the Eye,

CONTINUED.

§ 135. The progress of ophthalmoscopy has enabled us to ascertain that amaurosis is not the consequence of a single and always the same lesion, but may result from many diseases differing no less in their nature than in their locality.

All these diseases present as their characteristic sign, an impairment of vision (amblyopia) or loss of sight (amaurosis), in one or both eyes, without exhibiting to the naked eye any obstacle, preventing the access of light to the retina.

Amaurosis, having its origin in the ball of the eye or optic nerve, is nearly always discoverable by the ophthalmoscope. Negative indications presented by this instrument will turn the attention of the surgeon to the brain or more remote portions of the body. A careful study of the rational symptoms of brain disease will generally result in such a diagnosis as will eliminate all doubt of the propriety of rejection or discharge.

In deep affections of the eye accompanied by photophobia the employment of the ophthalmoscope requires caution. A method of examination which should never

be neglected is that of producing phosphenes.* This may be done by placing the subject in a darkened room, and when the eyelids are partially closed applying quick and interrupted pressure upon the eyeball.

**Amaurosis dependent upon the Optic Nerve—
Atrophy.—Hyperæmia.—Choroid Congestion.—
Apoplexy, or Softening.**

§ 136. Diseases of the optic nerve can only be recognized by the aid of the ophthalmoscope. Its atrophy, a frequent cause of amaurosis, and which is often complicated with cerebral amaurosis, is indicated by a glittering, pearly whiteness, and the smallness of the branches of the retinal arteries. In its normal state it presents a pale, pinkish-yellow appearance.

All diseases of the deep-seated parts of the eye, whether producing loss of sight, or only weakness, whether existing in one eye or in both, are causes for rejection or discharge.

At the same time it must not be forgotten, that amaurosis is one of those diseases the existence of which is most often *feigned*.

Having learned that the diseases comprehended under this designation are slow in their progress, and that they present no very characteristic objective symptoms at the outset, the malingerer readily asserts that his sight is either weak, or that he does not see at all.

In most instances the ophthalmoscope will detect the deception; failing to do so, there are other tests known to art by which all doubt can be removed, such as

* Phosphenes are luminous circles produced by forcible compression of the eyeball, for the purpose of testing retinal sensibility.

employing prismatic glasses to produce double images, etc. The latter expedient can be so managed as to detect many forms of imposture. For instance, a man may allege that he cannot see with one eye. Take him into a dark room, apply prismatic glasses, and produce a lighted candle; of course he says he sees two lights, and the deception is detected. This experiment may be so varied as to render imposture very difficult, if not impossible.

The patient's recital of his own case will contribute much towards assisting the surgeon's examination. You should also observe the comparative condition of the pupils, whether one is larger than the other, and whether it has the power of contraction when the fellow-eye is darkened. If he asserts it to be of long standing, the manifestations ought to be deeply marked.

Differential Diagnosis of Blindness from Amaurosis and from Cataract.

§ 137. Blindness resulting from amaurosis impresses upon the countenance an entirely different character from that arising from cataract. There need therefore be no difficulty in distinguishing them. The amaurotic subject carries his head high, and opens his eyes widely, in order to collect as much light as possible within the pupil, and thus stimulate whatever sensibility still remains in the retina. The subject of cataract, on the contrary, bows his head and inclines it in different directions, seeking for the position most favorable to the transmission of light between the iris and the opaque lens.

Amaurosis and cataract are not the only causes of loss of sight; but from whatever source this latter may

originate, and whether partial or complete in its nature, it always constitutes an absolute disqualification for military service.

IMPAIRMENT OF SIGHT.

Myopia (Near-sightedness).

§ 138. Near-sightedness cannot be recognized with certainty by external inspection of the eye alone. The use of glasses, and of the ophthalmoscope, is requisite to establish the diagnosis. If the subject, with double concave glasses of six-inch focus before his eyes, can read fine type (pearl) when held at a distance of less than six inches, no doubt can be entertained of his disability for military service. A less degree of myopia, especially when accompanied by posterior staphyloma, pigment maceration of the choroid, or floating bodies in the vitreous, may also justify his rejection.

In case the subject is unable to read, a simple and very conclusive test is that of successively applying various glasses for short-sightedness, and also plain glasses before his eyes without allowing him to examine them previously. The simulator cannot distinguish beforehand those with which it would be impossible for him to read, were he really near-sighted.

The existence of posterior staphyloma will be revealed by the use of the ophthalmoscope, and may always be suspected when the myopia is progressive, and characterized by any marked inequality in the sensibility of the retinal field.

Presbyopia.

§ 139. Presbyopia, or long sightedness is rarely en-

countered by the examining surgeon, for it is a disorder belonging to middle or old age. Convex glasses are its proper test, but in order to justify rejection, it should exist to a high degree. Even among old soldiers it is not a cause for discharge.

Hypermetropia.

Hypermetropia may exist at any age, and, if exceeding $\frac{1}{15}$, should cause rejection. The necessity of correcting this abnormality by the constant use of lenses is incompatible with the duties of a soldier.

Hemiopia (Partial Sight).

§ 140. In hemiopia the sight is limited to a part only of the object viewed. This state most frequently depends upon detachment of the retina, and other affections of the posterior tunics of the eye, as well as, in some instances, upon changes in the brain.

Diplopia (Double Sight).

§ 141. Diplopia, whether monocular or binocular generally results from derangement of the parallelism of the visual axes, and most often originates in muscular paralysis. The nature of the diplopia will depend of course upon the muscle or muscles at fault, and can only be decided by a careful study of each case, with the assistance of a slide of colored glass and a lighted candle in a darkened room.

Well marked diplopia is always a cause for rejection. In a soldier it may be curable and then not justify a discharge until the efficient cause has been ascertained to be of a nature unsusceptible of cure.

Pseudoblepsia (False Vision).

§ 142. Pseudoblepsia is an affection in which false objects appear before the sight ; such, for example, as the motes termed *muscæ volitantes*. It is often the first stage of amaurosis.

The foregoing affections reveal themselves by no external sign, yet in certain cases much valuable information may be obtained by the ophthalmoscope. They require that the recruit be rejected, if their cause depends upon serious lesions of tissue. But they justify a discharge only if springing from progressive, structural changes.

Photophobia (Intolerance of Light).

§ 143. This condition is symptomatic of diseases which often may, but which do not necessarily, justify either a rejection or discharge. It may depend upon some curable disease of the conjunctiva or cornea, and therefore render a discharge from service improper ; or it may supervene upon some fever or blood disease, and gradually subside as convalescence progresses. A displaced eye lash may be the only cause for its presence.

Hemeralopia (Night-Blindness).

§ 144. In hemeralopia the person sees clearly during the day and becomes blind during the night. At sunset surrounding objects begin to be covered by a grayish veil ; he scarcely sees them, or not at all, when illuminated by an artificial light amply sufficient for bystanders ; and he sees even less clearly by moonlight. At day-break sight returns, and again continues in its normal state until sunset. It may be consequent upon cerebral con-

gestion, certain intestinal diseases, scurvy, and pernicious fevers. There is no test by which its genuine character can be determined; generally the ophthalmoscope reveals marked choroidal congestion of a passive character.

Nyctalopia (Day-Blindness).

§ 145. Nyctalopia, the opposite condition of the foregoing disease, is of rather rare occurrence. In this disorder the person sees objects only dimly or not at all during the day, or when they are illuminated; while in a dark place at evening, or during the ordinary darkness of night, he sees them very well.

Both the foregoing diseases justify the rejection or discharge of an individual.

DISEASES OF THE CONJUNCTIVA.

Ecchymoses.

§ 146. Care must be taken not to confound ecchymoses of the conjunctiva with inflammation of that membrane, the ordinary form in which ophthalmia manifests itself. The former may result from external violence and be of no importance, or, on the other hand, they may indicate a condition of plethora or a scorbutic cachexy. The plethoric congestion may be the result of temporary excitement, while scorbutic ecchymoses constitute a serious condition, requiring rejection of the recruit, by reason of the impairment of constitution which they indicate.

Chemosis (Elevation of the Conjunctiva above the Cornea).

§ 147. Chemosis may be a cause for rejection, if it be

severe and threaten the integrity of the cornea. The value of this condition must depend, in a great measure, upon the nature of the disease of which it is a symptom.

Cysts.

§ 148. Cysts and fibrous tumors of the conjunctiva are generally of small size and easily curable. They however require the rejection of a party, if they present themselves in the vicinity of the cornea and encroach upon it.

Pannus.

§ 149. Pannus is always an absolute disqualification for military service.

Pterygion is a varicose, pyramidal shaped development of the vessels of the conjunctiva, whose base rests upon the sclerotic, and whose summit extends towards the centre of the cornea. Unless obstructing vision, pterygion is not a cause either for rejection or discharge.

Xerosis (Dry Ophthalmia).

§ 150. Xerosis or dryness of the conjunctiva is a rare disease and always a cause for rejection or discharge.

DISEASES OF THE ORBIT.

Deformities.

§ 151. Deformities of the orbit are extremely rare, and, in the majority of instances, are complicated with diseased conditions which interfere with sight. Sometimes a narrowness or species of atrophy of this cavity is met with, which may be a cause for rejection.

Fractures.

§ 152. Fractures, loss of substance, and cicatrices are the only mechanical lesions of the orbit requiring notice. In determining the question of disability, the surgeon must consider the extent of the lesion present, or the loss of substance ensuing.

Foreign Bodies.

§ 153. Foreign bodies may be lodged in the orbit and occasion inflammations, abscess, ostitis, caries, and necrosis.

Tumors.

§ 154. Various kinds of tumors, although of rare occurrence, develop themselves within this cavity, having their seat either external to, or within its walls, and producing exophthalmos. Such are abscesses, cysts, fatty and erectile tumors, exostoses, or aneurism. These always form causes for rejection, and sometimes for discharge.

DISEASES OF THE MUSCLES OF THE EYE.**Strabismus.**

§ 155. Strabismus is the consequence of functional disorder of the nerves, or of cerebral disease. It is simple or double, convergent or divergent, primitive or consecutive to tenotomy. Permanent, fixed strabismus of the right eye is always a disqualification for military service, by reason of the deviation in this organ which it causes, and the impairment in functional tone which inevitably precedes or follows it.

Strabismus may be feigned, but then it is slight and subject to variation.

Before expressing any opinion in the premises, the surgeon should satisfy himself that the deviation is fixed and permanent.

Feigned strabismus may be detected by awaking the subject from sleep. Under this test, the lids in opening will exhibit the eyeballs in their normal state of parallelism; the same proof may also be obtained by examining the eyes when the person is asleep.

When the party is awake, a great and sudden surprise practised upon him, will often be sufficient to make him forget the part he is acting; or in order to discover the cheat, he may be compelled to follow with his eyes an object slowly passed before them. Among simulators strabismus is commonly binocular, it is always convergent. Generally speaking, the fatigue resulting from the continued voluntary contraction of the muscles of the ball of the eye, puts an end of itself to the deception, and this may also be discovered by placing the party aside, and under rigorous supervision for a short time.

When the strabismus unites the two conditions of permanence and fixedness, there is always a tendency to retraction of the motor muscles of the eye, particularly of the internal rectus muscle, and the deviation usually increases progressively, together with the impairment of sight. A somewhat frequent form of strabismus observed is that known as alternating-convergent.

Nystagmus.

§ 156. The muscles of the eye are at times the seat of a spasmodic contraction, of variable intensity, termed nystagmus, which is sometimes a symptom of disease of the brain.

This condition is accompanied by a sensible diminu-

tion of sight and requires rejection. It may be feigned, but a critical examination soon exposes the cheat. In real nystagmus the motion of the eyes is extremely rapid, with increased vibrations and deviations when a distant object is viewed, and diminishing markedly, or ceasing, when a nearer one is looked at; hence the motion is usually lessened in reading. In true nystagmus there is almost invariably a tendency to bring objects looked at close to the eye. This disease always requires the rejection or discharge of its subject, since it is invariably associated with cataract or retino-choroidal disease.

DISEASES OF THE EYELIDS.

Deformities.

§ 157. Absence or atrophy of the lids is extremely rare, but always a disqualification for military service.

Adhesions.

§ 158. Adhesions of the lids, either between themselves (ankyloblepharon) or to the ball of the eye (symblepharon), and the lesions following them—inversion (entropion), or eversion (ectropion)—are causes for rejection, whenever the adhesions are sufficiently extensive to impair the sight or induce irritability of the eyes; but no discharge should be granted until treatment has proved unavailing.

Trichiasis.

§ 159. Inversion of the eyelashes (trichiasis), or their abnormal development and direction, (distichiasis), or their entire loss, exposes the eye to inflammation and is a cause for rejection. Trichiasis may be treated successfully: hence the subject of discharge need not be alluded to in this connection.

Wounds.

§ 160. Wounds of the eyelids, cicatrices, chronic inflammations, hypertrophy, encysted or other tumors, as well as ulcers, are either compatible with the discharge of military duties, or else require rejection of the recruit, according to their extent and severity. Many of these lesions may be cured by methodical treatment, or a slight surgical operation; as, for example, encysted tumors, abnormal adhesions, &c. : hence, these lesions are less a cause for discharge than for rejection.

Blepharospasm.

§ 161. Blepharospasm is an affection marked by involuntary and convulsive movements of the eyelids, alternating with intervals of repose. It is always a cause for rejection.

Spasm of the eyelids may be feigned by the simple operation of the will, or produced by the momentary introduction of a foreign body beneath the eyelids. In the first instance, the party must be observed when his attention is called away and excited by others; or if the introduction of a foreign body is its cause, careful scrutiny will exhibit more redness of the conjunctiva and weeping than in the real disease. Moreover, there will be noticed rather a predominant contraction of the orbicular muscle than a regular, yet instantaneous, alternation in the closing and opening of the eyelids.

This disorder must not be confounded with habitual winking, a condition generally speaking, of little importance, and which would require rejection only when very severe and dependent upon some incurable lesions of the palpebral conjunctiva, or deformity of the edges of the eyelids.

Hordeolum.

§ 162. The ordinary styce can never deceive the surgeon, nor cause itself to be mistaken for any thing serious.

Granulations.

§ 163. Granulations of the eyelids may be either the cause, or the consequence of inflammation. They justify rejection or discharge whenever well marked. Yielding very slowly to treatment, they become formidable by reason of their contagiousness and disastrous influence upon the health, and transparency, of the cornea. Even when not of the contagious variety, they lead the way by changes in the shape of the eyelids to trichiasis or distichiasis, and thus may impair the health and transparency of the cornea after all roughness of the palpebral conjunctiva has disappeared. A person having once had granular lids, is subject to a recurrence of the disease.

Paralysis.

§ 164. The eyelids may lose their power of performing either of the functions of *opening* or *closing*, owing to either contraction of the levator palpebræ superioris, or paralysis of the orbicular muscle, or ptosis, or spasm of the orbicularis.

Inability to close the Eye.

§ 165. Tonic contraction of the levator muscle is rare and symptomatic of nervous disease, which forms of itself a cause for rejection. Paralysis of the orbicular muscle never exists without more or less paralysis in other branches of the facial nerve. It forms a disqualification for the military service, particularly when of

long standing. It may be symptomatic of constitutional disease of a curable character, and should, therefore, have the benefit of appropriate treatment, before occasioning discharge from service.

Occlusion.

§ 166. Occlusion may arise from paralysis of the levator muscle, or adhesions between the eyelids, or the eyelids and eyeball.

This disorder may at times be temporary, and owing to inflammatory or sanguineous tumefaction of the eyelids, or adjoining tissues, to erysipelas, eczema, or erythema. The ptosis should then disappear with its temporary cause. But if there be ptosis accompanied by flaccidity, and slight œdema of the cellular tissue, if the eyelid falls as soon as raised, or slowly settles down into its former position, without any other disease being present in its vicinity, the party must be rejected.

Ptosis is often accompanied by diplopia, divergent strabismus and mydriasis, and slight protrusion of the ball of the eye, all indicating paralysis of the third pair. In closely scrutinizing the eye, the loss of power in the muscles involved may be detected. The method of studying the double images will occur to any one familiar with modern ophthalmology. The slide of colored glass, the candle in the darkened room, &c. This condition furnishes a cause both for rejection and discharge.

Holding the lid down and compressed for some time may produce a temporary inertia of the part, and if watery emollient applications have been made to it, a slight œdema supervenes, which, by its weight and tension, tends in turn to keep the lid down. This method of feigning ptosis has often been tried. The

cheat can be readily exposed by slightly pinching the eyelid with the fingers or forceps into a fold. The party is then required to look up strongly with both eyes; immediately, the superior rectus muscle which receives its innervation from the same branch as the levator palpebræ superioris, carries the eye up and the lid follows instinctively from harmony of action; it is then also seen that there is neither dilatation of the pupil, nor divergent strabismus. Were the paralysis real, the eye could not be carried up under the lid, lifted by the fingers, and the eyelid could not raise itself. Even if some specific substance had been introduced into the eye for the purpose of dilating the pupil, the cheat could still be discovered in the absence of strabismus, for in this particular instance mydriasis could not well exist without strabismus.

DISEASES OF THE LACHRYMAL PASSAGES.

Tumefaction of the Lachrymal Gland.

§ 167. Each of the various parts constituting the lachrymal passages, may be the seat of some disqualifying disease.

At the external angle of the eye, the swollen lachrymal gland is occasionally, though rarely, seen uplifting the superior eyelid, constituting an external projection, pushing the eyeball inward, downward, and towards the nose, and even outside of the orbit, which produces a sufficient disturbance in the axis of vision to impair the sight. This disease dependent upon chronic inflammation or degeneration of the gland, and which can be neither feigned nor concealed, is an absolute disqualification for military service. In soldiers, although the

tumor may be removed, particularly in the early stages of the disease, subsequent discharge is generally inevitable. The suppression of tears, which is owing for the most part to the extirpation of this, their secreting gland, exposes the eye to frequent causes of inflammation, not only by depriving it of continual lubrication, which neither the moisture of the conjunctiva, nor the secretions of the meibomian glands can replace, but also of the means of ridding itself, by super-secretion, of foreign bodies, dust for example, accidentally lodging between the eye ball and the lids.

Epiphora.

§ 168. An opposite condition to the foregoing is that of the superabundant secretion of tears, provoked by the slightest exciting cause, overflowing the eyes and spreading upon the cheeks. This is often a disqualification for military service, on account of the permanent irritation which results from it, and more particularly by reason of the annoyance and fatigue to the sight, produced by the new refraction, to which the rays of light are subjected before entering the pupil. This disease is generally the consequence of various forms of lesion which it becomes necessary to discover, since it is upon the lesion itself, rather than its result, that the surgeon must found his decision. Ordinarily it is easy to distinguish the slow and regular epiphora, occasioned by old and permanent lesions, from temporary epiphora, which might, for purposes of simulation, be excited by topical irritants. So also epiphora may be accidental and momentary, and arise from various unimportant causes.

Destruction, Obliteration of the Puncta Lachrymalia.

§ 169. Destruction of the puncta lachrymalia, fortunately a very rare thing, is a cause for rejection or discharge.

Partial occlusion of the puncta and of the lachrymal passages, does not in itself constitute a cause of ineapacity. Congenital obliteration would alone constitute such a cause, but this is extremely rare. Partial occlusion by inflammation or obstruction is frequent enough, but generally curable.

Deviation of the Puncta and Lachrymal Ducts.

§ 170. Deviation of the puncta and lachrymal ducts, which may be the result of chronic thickening of the surrounding conjunctiva, of a tumor developed in that region, or of an eversion of the lower lid, produced by loss of substance, when sufficiently advanced to interfere with their functional activity, is always a cause for rejection, but not of discharge, for it is often susceptible of radical cure.

Lachrymal Tumor and Fistula.

§ 171. Lachrymal tumor and fistula, being different degrees of a similar disease, are always a cause for rejection, but only accidentally so, of a discharge. They result from inflammation of the canal and tear-sac, scrofula, syphilis, or wounds.

In order to distinguish the tumor, it suffices, if the surgeon is not already convinced by the coincidence of continual epiphora with distention of the lachrymal sac, to press this latter for the purpose of causing the contained fluid to exude through the puncta; when the

puncta are closed by inflammatory swelling, the diagnosis must rest upon the observer's knowledge of the anatomy of the parts. In fistula the escape of tears through the ulceration situated over the sac, leaves no room for doubt.

Lachrymal tumor may result from acute inflammation of the canal and be cured by a simple treatment. It should not be a cause for rejection if the patient is otherwise healthy, but if dependent upon scrofula, syphilis, or a wound, rejection of the party must follow as a consequence.

Fistula lachrymalis can neither be feigned nor concealed; a clumsy mode of simulation might be practised by blowing air under the skin, but this accidental emphysema could hardly deceive the surgeon.

Chronic inflammation of the lachrymal sac, with disorganization of the sac walls and membranous lining of the nasal ducts, does not necessarily demand discharge, though they should preclude admission into the service. It has been demonstrated by large experience, that obliteration of the sac by the actual or potential cautery may be so effected as to restore the soldier to usefulness. Particularly is this the case when among soldiers the disease is confined to the left eye, and not due to scrofula or syphilis, or complicated by caries of the bony parts or confirmed ozæna.

Diseases of the Lachrymal Caruncle.

§ 172. The lachrymal caruncle is at times the seat of a soft excrescence of a red, livid hue, which, at first trifling, is liable to acquire a large size. The intervention of this tumor, or *encanthis*, between the commissure of the eyelids, which is thereby necessarily kept stretched, keeps

up a chronic conjunctivitis and often produces epiphora, by everting the orifices of the lachrymal ducts. Entropion may assume a cancerous, fungous, or calculous character, in which conditions it always constitutes a disqualification for military service. Even when of a benign character, it is a cause for rejection, for it is only curable by extirpation; but in soldiers it justifies a discharge only when its volume forbids its removal, or when after such operation, there remains some serious disorder, such as granular lids, epiphora, or eversion of the eyelid.

The lachrymal caruncle may be wanting, which is a rare thing; but this would justify neither a rejection nor a discharge.

SECTION XX.

DISEASES OF THE NOSE AND NASAL FOSSÆ.

§ 173. Examinations of the nose by the sight and touch are usually sufficient for the purpose of discovering its diseases; the sense of smell may also be used, together with the blunt probe, or catheter, employed in diseases of the nasal passages.

Deformities.

§ 174. Deformities of the nose to the extent of sensibly hindering either respiration or speech, and which may be congenital, or the result of fractures, of cicatrices consequent upon wounds, of burns, a rhinoplastic operation, or a state of permanent congestion, and producing either partial or complete loss of the nose, or

its atrophy, hypertrophy, crookedness, flattening, or a crushing of its bridge—whenever these are of an extreme character, all form causes for rejection.

Herpetic Affections.

§ 175. The nose is the chief seat, and often the starting point of two herpetic diseases, which generally spread themselves over other parts of the face, and occasion more or less serious alterations. These are *lupus exedens*, already described by us; and *acnea rosacea*, a rare affection among the young, and which is distinguishable by its varying deep-red color. It attacks successively the cheeks and the forehead, which become thereby tumefied and deformed, as well as the nose. Its appearance is hideous and repulsive, and its cure always long and uncertain. These two diseases are absolute causes for rejection or discharge.

Obliteration of the Nostrils.

§ 176. Obliteration of the nostrils is very rare, and may result from hypertrophy of the cartilage.

Burns also sometimes occasion narrowing of these cavities, to the extent of impeding respiration. All such cases constitute an absolute disqualification for the military service.

Perforation of the Septum.—Foreign Bodies.

§ 177. Perforation of the dividing cartilage, or septum, is not incompatible with the discharge of military duties. The same rule will apply to foreign bodies, voluntarily or accidentally introduced into the nostrils, unless they have induced serious lesions.

Epistaxis.

§ 178. Habitual epistaxis, which may easily be feigned, is not a disqualification, unless it springs from a diseased condition of body.

Chronic Coryza.

§ 179. The pituitary membrane may be the seat of chronic inflammation, a condition which does not necessarily disqualify a recruit for service, unless it be so aggravated as to impede respiration. This condition is liable at times to be mistaken for polypus.

Polypus.

§ 180. Polypi which are of most frequent occurrence in the nasal fossæ, are absolute causes of disqualification in a recruit. Many of these polypi are in their nature recurrent, while others, though more rarely, tend to degenerate into cancer. When occurring in newly enlisted soldiers, no discharge should be granted, until the obstinacy of their recurrence plainly indicates their incurability.

Attempts at simulation through the agency of animal substances are easily discovered. The natural condition of the nose, the healthy state of the mucous membrane of the nasal fossæ, and the insensibility of the tumors, would all serve to disclose the cheat. The extraction of the foreign body itself, or its expulsion provoked by sneezing artificially produced, after the surgeon has satisfied himself that it is not held by any thread passing through the posterior nares, and fastened to one of the back teeth, will finally determine the question as to its true origin and character.

Ozæna.

§ 181. An unnatural flatness of the nose, or the presence of polypi, by blocking the nasal passages, and preventing the escape of their natural secretions, gives rise to a decomposition of the latter, which infects the expired air with a peculiar fetor. The disease from this circumstance has received the name of ozæna. It is also produced by an ulceration, sometimes syphilitic, of the mucous membrane of the nasal passages, of the velum palati, or of the maxillary sinus; or again it may spring from a morbid state of the constitution and independent of any local influences. Its rebellious character under treatment, whether of an internal or external form, always renders it a sufficient reason for rejecting a recruit, because of the discomfort, likely to be caused to others through its insupportable fœtor. When present in a soldier its probable causes should first be ascertained, and the chances of its ennobility, before granting a discharge.

The peculiar odor emitted by ozæna is occasionally simulated by introducing into the nasal passages, sponges impregnated with putrid animal matters, or pieces of decomposed cheese.

Certain diseases giving rise to the *nasal voice*, through division of the velum palati, its permanent paralysis, perforation of its arch, or the presence of tumors in the back part of the throat, are also a suitable cause for rejection.

SECTION XXI.

DISEASES OF THE FACIAL SINUS.

§ 182. Diseases of the frontal and maxillary sinus are similar in nature to those of the nasal passages. These cavities may be deformed, obliterated or perforated by wounds, fistulas, ulcers, or fractures with depression, or even by the introduction of foreign bodies; or they may be the seat of chronic inflammation and suppuration, of exostosis, caries, or necrosis with fistulous ulceration, often dependent upon syphilis. Polypi rarely present themselves in these parts.

Occlusion.

§ 183. Occlusion of the maxillary sinus, occasions a species of œdema of these parts.

Nearly all the foregoing diseases afford causes for rejection or discharge.

SECTION XXII.

DISEASES OF THE MAXILLARY BONES.**Affections of the Superior Maxillary Bones.**

§ 184. These bones when *atrophied* or *hypertrophied*, constitute a deformity.

Congenital Fissure.

§ 185. Congenital fissure of the arch of the palate, which sometimes accompanies harelip, is a cause for rejection.

Accidental Lesions.

§ 186. The upper jaw may be the seat of severe mechanical lesions, of simple or complicated wounds, of perforations or of fractures, any of which may afford causes for rejection, according to their gravity. The same rule will apply with relation to the presence of foreign bodies, ulcerations, extensive cicatrices or deformities, consequent upon surgical operations.

Perforation of the arch of the palate, may be concealed by the application of an obturator. This portion of the mouth should therefore always be explored by the touch, as well as sight. This is a frequent seat of osteo-sarcoma and epulis.

AFFECTION OF THE INFERIOR MAXILLARY BONES.

Congenital Lesions.

§ 187. The lower jaw is a very common seat of disease. Its atrophy produces not only a painful deformity, but a defect of harmony between the rows of teeth. The same result follows its undue prominence. Either of these congenital lesions is a cause for rejection. But inasmuch as prominence of the lower jaw may be simulated by voluntary and momentary effort, it is well to make the recruit speak in order to detect the cheat.

Accidental Lesions.

§ 188. Ununited or badly-united fractures, or loss of substance of this bone, either from gun-shot wounds, or resections, are disqualifications for the military service. Other diseases are also often observed there, such as otitis, caries, necrosis, particularly the phosphoric necrosis, bony cysts—all which generally unfit a man for military service.

Temporo-Maxillary Articulation.

§ 189. The temporo-maxillary articulation is often the seat of disqualifying diseases, such as an imperfectly reduced luxation, which impedes mastication, or a facility of luxation often of a voluntary character.

Contraction and Ankylosis.

§ 190. Contraction or closing of the jaws which may be either congenital, accidental or resulting from the influences of mercury, is a cause for rejection; ankylosis (a rare thing) is its most aggravated form.

In order to ascertain the reality of this condition, when alleged to exist, the index finger of each hand should be pushed into the hollow formed between the mastoid process and the ascending angle of the lower jaw, at the same time strongly compressing the nerves of the facial branch at their point of emergence. The pain consequent upon this operation immediately does away with the contraction, if it be voluntary and simulated.

SECTION XXIII.

DISEASES OF THE MOUTH.

§ 191. The mouth serving as it does the threefold purposes of mastication, respiration, and speech, often presents some of the greatest disqualifications for the military service. A curved spatula for depressing the tongue is very useful in its examination.

DISEASES OF THE LIPS.

Skin Diseases.

§ 192. The lips are often visited by severe skin diseases, which give cause for rejection whenever they do not promptly and evidently yield to medical treatment. The disgusting appearance presented by these affections, and their repulsiveness in the eyes of soldiers, obliged to live in common, is an additional reason for their being a disqualification. Mentagra in particular, which consists in a pustular eruption about the lips and chin, and whose duration can rarely be determined, should always cause the rejection of a recruit. This disease is sometimes feigned, but always in so gross a way as to give little trouble to the surgeon in discovering it. No directions need be given.

Hypertrophy.—Contraction.—Accidental Harelip.

§ 193. The upper lip may be hypertrophied to such a degree as to constitute a true deformity, and to impede

distinctness of articulation. So also burns and ulcerations, by causing adherent cicatrices about the orifice of the mouth, may occasion its contraction to such an extent as to produce deformity, or impair the freedom of its use. A lip, from a wound, or mutilation, may be left with a form of accidental harelip, or either of them may be wanting in whole, or in part, together with some portion of the cheek; again, the upper lip may be the seat of a congenital fissure, sufficiently extensive to impede speech and even mastication, if the split be large enough to expose the teeth up to the gums.

Excessive swelling of the upper lip may be produced by the sting of an insect (e. g., bee, or wasp), or the application of some irritant, but the extent of the swelling, heat, tension, redness, and shiny appearance, renders it readily distinguishable from a chronic swelling, which latter proceeds, almost always, from a scrofulous habit.

Labial Paralysis.

§ 194. The muscles designed to move the lips and the cheeks, and supplied by the facial nerve, may be paralyzed either simply, or jointly with the orbicular muscle of the eyelids, and those giving motion to the *alæ nasi*. In such cases the lips are completely immovable, and unable either to seize, or to retain food, which escapes, together with the saliva, from the paralyzed side of the mouth, while certain vowels and labial consonants can scarcely be articulated. The cheek being flaccid cannot perform its office, either of mastication or deglutition. This form of paralysis, in its effects upon the competency of recruits, falls into the same class with that of the orbicular muscle of the eyelids.

Stomatitis.

§ 195. Stomatitis, or inflammation of the mouth, may arise from different causes, producing likewise different effects upon the question of qualification. As a general rule, this disorder is of trivial consequence, unless dependent upon some constitutional impairment. Thus it may be either diphtheritic, scrofulous, syphilitic, scorbutic, mercurial, ulcerous, or gangrenous. Some of these forms are manifestly of easy cure, while others require too long a treatment to tolerate the acceptance of any recruit laboring under them. *Gangrene* of the mouth, for example, always is a cause for rejection, owing to the loss of substance, the imperfect or adherent cicatrices, and the perforations or fistulas, which it generally determines.

Fetor of Breath.

§ 196. Stomatitis often occasions fetid breath. This condition arises also, frequently, from a carious state of the teeth, or some lesion of the stomach. In either case it may render a man insupportable to his companions, and thus justify his rejection, or even his discharge. When arising simply from an uncleanly state of the mouth, the cause is readily removable; and when simulated by the swallowing of fetid substances, the cheat can be easily discovered by the different nature of the odor emitted.

Diseases of the Gums.

§ 197. Shrinking of the gums, giving rise to loosening of the teeth, is always a cause for rejection.

Inflammation of the Gums (Gingivitis).

§ 198. Chronic gingivitis, ulceration, or hæmorrhage, which are easily provoked or simulated, are not causes for rejection, unless dependent upon scurvy, anæmia, &c., &c.

Scorbutic Condition.

§ 199. Irritating and corrosive substances applied to the gums may give rise to appearances, simulating those of scurvy; but it is impossible to imitate the sero-sanguinolent discharge, which flows from the gums on the least touch, the deposit of sordes upon the teeth, or their loosening, as observed in the real disease. Mercurial preparations might, to a certain extent, produce analogous effects, but the specific inflammation of the mouth always following their use, ulcerations on the edges of the tongue, and salivation, characterized by its abundance and its peculiar odor, would readily reveal the original source of the mischief.

THE TEETH AND THEIR DISEASES.**Loss of Teeth.**

§ 200. Besides the office of mastication performed by the teeth, they are essential to the soldier for the purpose of tearing his cartridge, and when they cannot do this for him, he is disqualified for the military service. The soldier must have enough sound teeth to chew the food composing his rations, particularly hard bread. Admitting all other teeth to be sound, the recruit must still be rejected when he presents the following dental conditions, viz. :

1st. Loss or decay of the four incisors of the same jaw.

2d. Loss or decay of the two lateral incisors or cuspids of each jaw.

3d. Loss or caries of several incisors or cuspids in either jaw (five at least).

Where the other teeth are not in a state of soundness, the recruit should likewise be rejected. If some of the molars are wanting, the others should at least be sound together with the gums, otherwise the latter are exposed to frequent irritation, to swelling, and to recurrences of disease under the slightest exciting causes. Whenever therefore a bad state of the teeth is accompanied by softening, chronic ulceration, livid and sanguinolent swelling of the gums, or an impaired state of the constitution, the recruit must be rejected. But, on the other hand, if the teeth are, generally speaking, sound, and only disfigured by sordes, and if the constitution be good there is no cause for rejection. Among soldiers, the loss of many teeth (the cuspids always excepted) without accompanying disease of the gums, or of the constitution, does not necessarily prevent their usefulness nor justify their discharge.

Congenital Absence of Teeth.

§ 201. Congenital absence of several teeth is not a disqualification in a recruit, so long as the remainder are duly and orderly placed.

Absence of teeth may, undoubtedly, be the result of criminal design, and in such cases, it will be difficult for the surgeon always to detect the fact. Presumption in favor of natural loss will arise, whenever the remaining teeth are unsound, the gums fungous, ulcerated, &c., and the constitution enfeebled: still, an opposite condition of things does not certainly prove fraud. Finding

the fangs of the teeth cut off on a level with the alveolar process, is not, as has been generally supposed, a proof of deception, because certain forms of decay or accidents may have occasioned it.

Again, loss of teeth may be concealed by the introduction of artificial ones; to guard against which, a critical examination of the mouth should always be made.

Dental Anomalies.

§ 202. Anomalies of the teeth must be duly considered, and investigated, under the light of their possible influence as exciting causes of disease of the maxillary bones. These diseases have already been alluded to.

Supernumerary Teeth.

§ 203. Supernumerary teeth, although occasioning no discomfort, may yet produce a sufficient deformity to require the rejection of a recruit.

Deviation and Fistulas.

§ 204. Deviation of the teeth, unless in the most exceptional instances, cannot be considered as a disqualification.

So with dental fistulas, which are cured by the extraction of the diseased tooth.

Diseases of the Tongue.

§ 205. The tongue being an organ of indispensable use in the processes of mastication, deglutition, or articulation, any serious lesion of it must therefore be a disqualification for the military service.

Prolapsus.—Congenital Division.—Hypertrophy.

§ 206. Prolapsus of the tongue, which is a rare congenital affection, is productive of salivation, and always a cause for rejection. The same is the case with *bifid* tongue, or a hypertrophied state of that organ, consequent upon inflammation, and exposing its subject to the danger of asphyxia.

Mechanical Lesions.

§ 207. Various mechanical lesions, such as wounds arising from bites, accidents, or convulsions, may give occasion for rejection, according to their extent or original cause.

Partial Loss.

§ 208. The same rule will follow in partial loss of the tongue, which, if inconsiderable and traumatic, is not a disqualification for military service.

Retraction.

§ 209. Retraction of the tongue, which may be either spasmodic, progressive, primitive, or consecutive, is not a disqualification in itself. The original cause and the gravity of the lesion, must in each case determine the question.

Abnormal Adhesions.

§ 210. The mobility of the tongue, being an indispensable condition for the performance of its functions, any thing interfering with it in the nature of abnormal adhesions, consequent upon acute or ulcerative inflammation, or extensive lesions, forms evidently a disquali-

fication for the military service. But, inasmuch as many of these deformities readily yield to surgical treatment, it does not follow that their presence among soldiers, necessarily justifies a discharge, and not until art has failed in her resources, or nature reproduces the deformity with resistless obstinacy, should this be granted.

Stammering.

§ 211. Stammering, from whatever cause arising, is an absolute disqualification for the military service; not only because it prevents *challenging*, or giving the countersign, but, because it acts as an insuperable bar to the promotion of men, by disabling them from giving the word of command. Tenotomy, which was formerly practised in such cases, is now entirely abandoned.

From the fact that, most frequently, the mouth exhibits no alterations in structure, by which to explain the cause of this disorder, stammering is among those disabilities most apt to be feigned. The duty of the surgeon in such cases is, by examining all their probabilities, and comparing them with public report, to determine whether the actual state of things is a natural, or a counterfeit, or exaggerated one.

Dumbness.

§ 212. Dumbness, which as we have before stated, is often congenital, and the result of deafness, may also be accidental, symptomatic of cerebral disease, or the result of a wound, atrophy, hypertrophy, or paralysis of the tongue. Of all the foregoing causes, the last only can be feigned. In inquiring into the possible causes of this, it is necessary to ascertain whether any disease of the

brain has previously existed, or if any blow or wound of the head has ever been received. When there is real paralysis, the tongue is thin, emaciated, and, as it were, rolled together, and the same cause which prevents articulation, prevents it also from being thrust out; whence the saying, that every dumb man, not born deaf, who can thrust his tongue out, and move it, is an impostor.

Diseases of the Velum Palati.

§ 213. Diseases of the *velum palati* are of important consideration, on account of their influence upon respiration, deglutition, and phonation.

Congenital Absence.—Division.—Loss of Substance.

§ 214. Congenital absence of the velum palati, whether total or partial, is rare. It always justifies rejection.

Its congenital or acquired fissures, losses of substance consequent upon wounds or ulcerations, tumors which may have their seat there, adhesions following inflammations or operations, and which are liable to close the posterior opening of the nasal passages, are all causes for rejection or discharge, whenever these lesions, combined with double and congenital division of the upper lip, affect the voice, and interfere with deglutition. It is more particularly so, when the arch of the palate shares this deformity in common with the velum.

Diphtheritic Paralysis.

§ 215. Diphtheritic paralysis, which is generally relieved by time, and without treatment, can only in extraordinary cases, justify rejection.

Diseases of the Uvula.

§ 216. Elongation of the uvula from relaxation of its tissue, œdema, or hypertrophy, produces a series of discomforts, such as incessant tickling, desire to swallow, at times a slight cough, or even frequent vomiting. As this condition is not a serious one, a slight surgical operation being sufficient to relieve the patient, it furnishes no cause for rejection, unless the uvula were not simply hypertrophied, but also the seat of cancerous degeneration. The question of discharge is still less to be considered.

Diseases of the Salivary Glands.

§ 217. The saliva being essential to digestion, the integrity of the glands concerned in its elaboration, becomes, therefore, an all-important prerequisite to health.

These glands are subject to alterations, bearing a great analogy to those of the lachrymal apparatus. The parotid, submaxillary, and sublingual, may be enlarged or degenerated; their secretions may escape involuntarily from the mouth, or be retained in the excretory ducts, occasioning a tumor, or even escape by a fistulous opening.

Chronic Enlargements.—Degeneration.

§ 218. Chronic enlargements, hypertrophy, or degeneration of the foregoing glands, which are diseases of rather an uncommon character, refractory under treatment, and dependent upon disordered constitutional habit, belong more properly among diseases of the neck, under which head we shall accordingly notice them. The same is the case with hypertrophy of the submaxil-

lary and sublingual glands, often confounded with submaxillary adenitis.

Involuntary flow of Saliva.

§ 219. Involuntary flow of saliva being always a secondary affection, its original cause is the proper subject of inquiry for the surgeon, for it may arise from loss of substance of the lower lip, paralysis, syphilis, &c., &c. This affection is easily feigned.

Ranula.

§ 220. The most common salivary tumor is ranula, which develops itself under the tongue, and impedes more or less its motion. It is frequently the result of salivary calculi, and always affords a cause for rejection, and often for discharge, because of its tendency to recur even after having been subjected to surgical treatment.

Salivary Fistulas.

§ 221. Salivary fistulas, usually the result of wounds, are difficult of cure, and always afford a cause for rejection, and often for discharge.

Atrophy and Hypertrophy of the Tonsils.

§ 222. Absence or atrophy of the tonsils, which is generally more apparent than real, is not a cause for rejection.

Chronic enlargement or hypertrophy of these glands, consequent upon repeated inflammation, is not a cause for rejection, until they have become so large, as sensibly to impede deglutition, hearing, phonation, or respiration.

Discharges should rarely be granted for this cause, since simple excision of the tonsils will most generally produce a radical cure of the disorder.

SECTION XXIV.

DISEASES OF THE NECK.

Deformities.

§ 223. Atrophy or congenital narrowness, or, on the other hand, excessive development of the neck out of all proportion to the head, or thorax, are at times observed, and may thus constitute a cause for rejection.

Ulcers, Cicatrices, and Scrofulous Enlargements.

§ 224. It is in the region of the neck that a scrofulous habit of body characterizes itself most strongly. Chronic enlargement of the cervical and submaxillary ganglia, abscesses, ulcers, and the cicatrices which they leave, all indicate a diseased constitution, and an unfitness to perform the duties of a soldier. Any of the lymphatic ganglia of the neck, may be the seat of scrofulous enlargement, but the submaxillary are generally points of election.

Scrofulous ulcerations of the neck, voluminous or multiple tumors of a similar nature, and the cicatrices resulting from their suppuration, when extensive and imperfect, are always causes for rejection. As to discharges, they should be granted only when the disease

has successfully resisted medical treatment, or produced changes in the body, incompatible with the performance of a soldier's duties.

Glandular Tumors.

§ 225. Glandular tumors, which are of frequent occurrence in the army, and present themselves under a variety of aspects, being generally known as the *cervical adenitis of soldiers*, are, when large, and of a chronic character, causes both for rejection and discharge. Care must be taken not to confound these tumors with enlargement of the post-cervical glands, symptomatic of secondary syphilis.

Varieties of Tumors.

§ 226. Aside from the diseases common to all parts of the surface of the body, various tumors may specially manifest themselves in the region of the neck; such as in front and below, enlargement of the thoracic or subclavian glands, and aneurism of the arch of the aorta; in front and above, ranula and bursal enlargement; on the sides, large parotid tumors, and disease of the cervical vertebræ. These different manifestations of disease plainly indicate to the surgeon the judgment he should pronounce.

Goitre.

§ 227. The term *goitre* is applied to nearly all the tumors which develop themselves in the thyroid gland. Chronic hypertrophy of this gland, whether partial or complete, parenchymatous or cystic, simple or complicated, constitutes a cause for rejection. In soldiers, no discharge is justifiable until the disease has passed into the chronic state.

An attempt to feign goitre by the introduction of air into the cellular tissue would have no chance of success.

But this disease, when slight and incipient, may be concealed. On which account, the thyroid region should always be closely scrutinized, and whenever the goitrous tumor is perceived, whatever may be its size, the party should be rejected.

Torticollis.

§ 228. The inclination of the head towards one shoulder, with deviation of the face towards the opposite side, constitutes torticollis, or wry neck. This disease may arise from a variety of causes, viz. :

1st. It may be congenital, or may have supervened in early childhood, as a result of nervous disorders.

2d. Bridled cicatrices may cause it.

3d. It sometimes arises from contractions or accidental paralyzes of the sterno-mastoid muscles; or,

4th. It arises from certain spasmodic affections of the muscular system, such as nervous contractions.

Torticollis may originate in either the cutaneous, fibrous, muscular, and tendinous tissue, or in the cervical vertebræ.

First form.—When the inclination of the head is congenital, it is always accompanied by a modification in the bony structure of the face, the skull, and the neck. If the disease dates from childhood, this modification instead of being contemporaneous with, or a cause of, the inclination, is consecutive to it, and progressively increased by the growth of the subject. This form of torticollis constitutes an absolute disqualification.

One of the constant and most striking effects of this deformity, is the inequality produced in the two sides of the face—on the one hand from atrophy of the side,

corresponding to the inclination, and which atrophy extends to the bony structure, as well as to the soft tissues, and on the other hand, dragging down of the same parts in the direction of the contraction. The cervical portion of the spine inclines laterally upon the first dorsal vertebra, in an opposite direction from the inclination of the head, whence it follows that on this latter side the supra-scapular space attains a greater length than on the opposite side. The mastoid process, corresponding with the infirmity, is sometimes longer than that of the other side; and an analogous difference is at times remarked in the prominence and curve of the clavicles. Finally, the motions of the head, although limited and modified, are not suspended.

Second form.—The presence of *cicatrices* explain sufficiently the mechanism of this variety of torticollis to leave no doubt as to the decision proper in relation to rejection or discharge.

Third form.—Contraction or retraction of one or several of the muscles which bend the head upon the body, and particularly of the sterno-mastoideus, whether resulting from convulsive rigidity, paralysis, or defective antagonism of opposing muscles, occasions an abnormal inclination, to which also the name of torticollis has been given. The *acute* form, which is easily curable, does not incapacitate for the duties of a soldier; it can be recognized by the sharp pain occasioned by any attempt at straightening the head, but chiefly by the absence of the characteristic signs of long standing torticollis, or that which springs from muscular retraction.

Fourth form.—When torticollis springs from paralysis, it is usually the sterno-cleido-mastoideus which suf-

fers. In such case, the head leans towards the healthy side, while the face looks towards the affected side. This is the opposite of what is observed in torticollis from contraction. The head can be easily, and without pain, returned to its natural position, but as soon as its support is removed, it resumes its faulty position. This disease is a cause for rejection, but not of discharge, until the paralysis has shown itself incurable.

It is evident, therefore, that congenital torticollis cannot be feigned, on account of the characteristic structural changes which, in various degrees, ever accompany it.

When torticollis springs from muscular contraction, the affected muscle towards which the head leans, forms beneath the skin a kind of stretched cord, prominent, resisting pressure, which opposes straightening by an equal and passive action, and which, neither distracting the attention of the party, nor force, unless excessive, can overcome.

In torticollis from paralysis, the healthy muscle which draws the head to its own side, shows neither extraordinary rigidity, nor hardness; but the opposite muscle, being deprived of activity, is soft, flaccid, inert, and, as it were, lost in the surrounding soft parts, and whatever may be the motions of straightening or rotation imparted to the head, it shows no signs of contraction. These symptomatic details, when well understood, will always enable the surgeon to distinguish the real disease, since simulators could hardly imitate them with sufficient accuracy to deceive him.

From whatever source arising, torticollis always constitutes a cause for rejection. Discharges should also be granted in those cases arising from cicatrices or trau-

matic lesions, and where art is ineffectual to relieve them.

The *organs of the voice* are so essential also to the soldier, that every obstacle to speech is a disqualification for the military service.

SECTION XXV.

DISEASES OF THE LARYNX AND TRACHEA.

Lesions.

§ 229. Both the larynx and trachea may be the seat of traumatic lesions, such as wounds, ulcers, fistulas, followed by adherent cicatrices, resulting either from wounds or tracheotomy; the thyroid cartilage may be fractured, or foreign bodies, though rarely, may lodge themselves in these organs.

These lesions are all causes for rejection, but justify a discharge, only when likely to be followed by serious complications.

Laryngitis.

§ 230. Acute laryngitis constitutes a disqualification only in serious cases, whose complexion is to be judged by the surgeon. The *pseudo-membranous* form presents danger enough always to justify rejection.

Chronic Diseases.

§ 231. Chronic affections of the larynx, although at times obscure in their local symptoms, yet always produce, when severe, a condition of system, which is

eminently suggestive to the observer. The relations which ordinarily exist between chronic lesions of the larynx and those of the lungs, should always cause the rejection of parties suffering under the former. These structural changes present themselves especially under the form of ulcerations of the larynx, and necrosis of its cartilages, or laryngeal phthisis, narrowing of the larynx resulting sometimes from laryngeal-tracheotomy, the presence of tumors, or of polypi.

These lesions often occasion an alteration of, and even a complete loss of voice (*aphonia*), sufficient in itself to disqualify a person for military service.

Aphonia.

§ 232. Permanent aphonia sometimes exists without any appreciable material lesion, although the laryngoscope may have been employed with a view to diminish the number of such obscure cases.

It constitutes even then a cause for rejection; but when presenting itself among soldiers it is well to try the efficacy of treatment before granting a discharge. In order to ascertain the reality of this affection, the surgeon must proceed by induction, and on the same principles laid down for cases of amaurosis and deafness. Aphonia is, in fact, at times feigned, and simulators have exhibited a degree of pertinacity under examination, sufficient to thwart for a long while, the tests to which they were subjected.

Feigned aphonia is generally recognized by the absence of sibilant sounds, of efforts at expiration, and of the swelling of the jugular veins, as well as of those of the anterior portion of the neck. In doubtful cases after a critical examination of the neck, the pharynx,

and the test with sternutatories, or coughing produced by breathing sulphurous acid, or chlorine, nothing remains but to try harsh and unexpected impressions; a cry emitted, or a word spoken aloud, in such cases, suffices to expose the cheat.

SECTION XXVI.

DISEASES OF THE PHARYNX.

§ 233. Diseases of the pharynx and œsophagus, by interfering with deglutition, may occasion serious impairment of the function of nutrition, and produce, when prolonged, a marked emaciation, profound debility, and general prostration.

Anomalies of the Pharynx.

§ 234. Anomalies of the pharynx, although rare, may occasionally present themselves. They would not afford a cause for rejection, unless there was sensible deformity, or something in the nature of a diverticulum (*cul-de-sac*), as has been sometimes observed.

Traumatic Lesions.

§ 235. Traumatic lesions of the pharynx, resulting from transverse, sub, or supra-hyoideal wounds, and occasioned by attempts at homicide, or suicide, even when fully cicatrized, require that the party should be either rejected or discharged.

Foreign Bodies.

§ 236. Foreign bodies which find their way into the

walls of the pharynx, such as fragments of bones, or small projectiles, are causes for rejection or discharge, according to the difficulty of their extraction, or the consequences produced by their presence. Foreign bodies, when swallowed, tend to pass from the pharynx into the stomach, thence to lose themselves in the bowels, or to make their way out of the body through different organs.

Pharyngitis.

§ 237. Inflammation of the pharynx becomes a cause for rejection, only by reason of its serious results and of their complications.

Diphtheria.

§ 238. Diphtheria, extending beyond the pharynx, is ever a disqualification in a recruit, and gangrenous angina equally so.

Retro-Pharyngeal Abscess.

§ 239. Abscesses formed behind the pharynx, do not generally arise from its inflammation, however severe this may be, but from more profound lesions, and particularly, from caries of the upper cervical vertebræ. They constitute retro-pharyngeal abscess, which is symptomatic of disease of a joint, and requires either the rejection, or discharge of its subject.

Ulcers.

§ 240. Ulcers of the pharynx, or of the isthmus faucium, most generally of syphilitic origin, are not a cause for rejection, unless they extend deeply and involve neighboring parts; such, for example, as the arch or the pillars of the palate.

SECTION XXVII.

DISEASES OF THE ŒSOPHAGUS.

Malformation.—Foreign Bodies.

§ 241. The Œsophagus may be the seat of various malformations, which it is here needless to enumerate. Among mechanical lesions, it is only necessary to cite foreign bodies, whose presence may afford cause for rejection. To justify a discharge, it would be necessary that the impossibility of either withdrawing them, or forcing them down, had been shown.

Dysphagia.

§ 242. The subject of dysphagia presents itself, not only under the aspect of traumatic lesions, but also with relation to various diseases, such as spasmodic stricture, either a purely nervous disease, or symptomatic of inflammation, stricture, partial dilatation, paralysis, softening (analogous to that of the intestine), ulcerations, cancer, &c. These diseases, although rarely encountered by examining surgeons, are frequently seen in hospitals, and ever afford a cause for discharge.

Dysphagia, from whatever cause arising, is always accompanied by an impairment of the general health. An examination of the bodily condition must always be made, whenever any suspicions of the reality of this affection arise.

Paralysis.

§ 243. Paralysis of the pharynx and of the Œsophagus, is an affection rarely occurring, except as a symp-

tom of serious nervous disease, and occasioning as a consequence, whenever prolonged, marked emaciation, profound debility and general prostration,—results, whose absence would set at defiance all such attempts at feigning as contortions during deglutition, efforts to vomit, to cough, to sneeze, by means of which an obstacle would be put to the entrance of food or drink into the pharynx, or those nervous spasms causing solid or fluid substances to be rejected through the nostrils, during deglutition. It is needless to remark that this affection is always a cause for rejection or for discharge, when incurable.

Coarctation, (Stricture).

§ 244. Difficulty of swallowing may arise from stricture of the œsophagus, without any appreciable external sign of this alteration. It may be discovered, however, by introducing into the œsophagus, a gum elastic sound. A urethral catheter of largest size, provided with a stylet, and slightly curved, will answer for this purpose.

By the obstacle encountered, and the sense of friction transmitted, it is easy to establish the existence, the situation, and the degree of contraction, of the stricture. This latter always affords a cause for rejection. A discharge should, likewise, always be granted, even though, by the employment of dilating instruments, a cure seems to have been obtained; because, in the first place, such a cure is never complete, and secondly, because the disease has a tendency to return in a more aggravated form under the influence of army diet, however good it may otherwise be. Feigning can be discovered by practising catheterism.

SECTION XXVIII.

DISEASES OF THE CERVICAL VERTEBRÆ.

Articular Torticollis.—Cervical Sprain.

§ 245. Diseases of the cervical vertebræ, require a critical examination, either by pressure with the fingers in the posterior region of the neck, or by exploring the posterior fauces, and particularly the pharynx. Touch will also enable us to discover certain congenital deformities or deviations of the bony structure of those parts (articular torticollis), or among anatomical lesions, cervical sprain, recent or of long standing, varying according to the degree of pain, the extent of deviation, and the immobility of the vertebræ, whose ligaments had suffered distension or partial rupture. The peculiar and persistent attitude of the head, well known to surgeons, is a pathognomonic sign of the disease, in its early stage. These diseases are always a cause for rejection. Feigned cervical sprain is of too easy discovery to require any special notice. The means to be employed by the surgeon in ascertaining its reality, require prudence and careful manipulation.

Fracture.

§ 246. Fracture or incomplete luxation of the cervical vertebræ, occasioning more serious effects than sprains, and creating danger of compression of the cord, leave no room for doubt as to the decision which should be made.

Other Diseases.

§ 247. Diseases of the *cervical vertebræ*, or their articulations, impairing permanently, or seriously, the

motions of the neck, whether arising from wounds, rheumatism, or scrofula, are a cause for rejection.

There is a serious condition sometimes resulting from one of the foregoing, which must not be overlooked in this connection. It is a form of white swelling, occipito-vertebral caries, which may suddenly complicate itself with spontaneous or symptomatic luxation, and thus produce instant death. Hence the necessity of carefully examining every one, presenting any appearance of this disease. Feigning of this would be almost impossible, before any practised surgeon.

SECTION XXIX.

DISEASES OF THE CHEST AND BACK.

General Considerations.

§ 248. The chest contains the principal organs of respiration, and of circulation, whose continuous and regular play is essentially necessary for the maintenance of life or health. It also acts as a point of support in the performance of many movements, and particularly of extraordinary efforts. And lastly, in a military point of view, it directly supports the hardest and heaviest portions of the equipment, such as the knapsack and other accoutrements. Under these various aspects, the condition of the chest in recruits should receive the most attentive examination. An external examination of the chest, enables us to appreciate its general conformation, and the different lesions which may exist upon

its exterior walls, such as wounds, ulcers, scars, tumors, &c., &c. Mensuration of the chest with a tape measure, will also afford valuable indications touching the dimensions of this cavity, in its relations to the size of the body, as well as to the volume of the important organs within.

Internal examination by means of auscultation* and percussion, reveals the principal diseases of the respiratory organs, and of the heart. Diseases of the chest having a melancholy frequency in the army, make it incumbent upon examining surgeons, to carefully scrutinize all recruits in this particular, with relation to latent predispositions.

The *form* of the chest may disclose through its various peculiarities, the state of the contained organs, and thus acquire great importance in every examination of a recruit. In a well-built man, the thorax is broad and prominently convex; the ribs are long and symmetrically arched; the shoulder-blades not prominent, and well covered by the muscles which move them and fill their cavities. In this portion of the trunk, many causes for rejection may be found.

DISEASES OF THE THORAX.

Deformities.

§ 249. Congenital deformities of the chest have their origin more particularly in its bony walls, but first of all, in the spinal column, whose deviations and curvatures

* It is a good plan, in auscultating a party, to place him with his back against a wooden door or partition. The greater resonance of the pectoral sounds obtained by this process, will surprise those who have never before availed themselves of this simple acoustic medium.

ordinarily produce relative deformities of the ribs and sternum. Rachitis is, moreover, a complex disease, and not restrained to the vertebral column alone, however great may be its deviations. Deformities of the chest may be enumerated as follows, viz. :

Prominence of the thorax, in the shape of a ship's kee (pigeon-breast). The cartilages of the ribs being straight, instead of prolonging the arched curve of the ribs.

Depression, at times considerable, of the lower portion of the sternum, and the ensiform cartilage, with inversion or eversion of it.

Extreme narrowness of the sterno-costal walls, best proved by mensuration.

Every one whose chest does not measure thirty-one and a half inches in circumference, should be rejected, as unfit for military service ; for rarely are such chests large or strong enough to enable the contained viscera to perform their functions without hindrance, and in particular, for the lungs to have full play.

Among other causes for rejection may be noted, curvatures of different kinds, partial deviation of the ribs and sternum, exaggerated mobility of the floating ribs, defective ossification of some portions of the sternum, which with a bifid state of this bone, are both of rare occurrence.

Wounds.

§ 250. Wounds of the chest may occasion consequences which often, but not invariably, afford causes for rejection or discharge.

Foreign Bodies.

§ 251. Foreign bodies of various kinds, such as projectiles and splinters, may be lodged in the walls of the

chest, and again extracted, or may penetrate its cavity. No general rule can be laid down touching the importance of such lesions. An attentive examination of each case is necessary to enable the surgeon to arrive at a correct decision.

Lesions of the Lungs.

§ 252. Contusions, lacerations, wounds, or hernia of the lungs, generally constitute serious lesions. The last named may be produced by other causes than a penetrating wound—may be congenital, or arise from an effort of coughing. Hernia of the lung, through the cicatrix of a wound, exhibits itself in the form of a soft, circumscribed tumor, which rises and falls with the respiratory movements. It is easily reducible, and then exposes the cavity into which the pulmonary parenchyma has escaped, to view, through the cicatrix. Auscultation reveals the presence of air in the cells of the tumor.

Traumatic Emphysema.

§ 253. Traumatic emphysema of the lung—pneumonia, and traumatic pleuritis—traumatic effusions, whether sanguineous, serous, or purulent, into the pleura or pericardium, paracentesis thoracis, and its consequences—all these surgical affections afford a cause for rejection, but not always for discharge.

SECTION XXX.

DISEASES OF THE RIBS AND STERNUM.

Mechanical Lesions.

§ 254. The structure of the solid framework of the chest composed of bones and cartilages, imparts to this portion of the trunk an elasticity, which enables it to resist very considerable violence. Nevertheless, all the lesions peculiar to its several tissues, may at times be observed: such as depression of the ribs, fracture of these bones, or of their cartilages, when non-consolidated or imperfectly consolidated. This form of fracture is always a cause for rejection, but its cure is so easy, whenever it is free from complications, that these alone can authorize the granting of a discharge.

Fracture of the sternum, and sterno-costal luxation, are rare; still, the foregoing rules will apply to them also. Defective ossification of this bone, or an undue mobility of its different segments, constitute a disqualification for military service. The same rule should obtain where the cartilage of one or more ribs is wanting.

Sterno-costal Ostitis.

§ 255. Ostitis and exostosis, caries and necrosis, and osteo-sarcoma of the ribs, or of the sternum, are of frequent occurrence in the army, and entail the consequences, already enumerated, as belonging to such diseases. Whatever may be the results of resecting one of these bones, they, still, always afford a cause for rejection and frequently for discharge.

SECTION XXXI.

DISEASES OF THE CLAVICLE AND OF THE CLAVICULAR REGION.

Aneurism of the Subclavian Artery.

§ 256. The clavicular region may be the seat of various tumors, of which, one in particular—aneurism of the subclavian—exhibits a special character, and produces the consequence already stated of such diseases.

Deformity of the Clavicle.

§ 257. The clavicle may suffer an arrest of development, or may have been subjected to irregular or faulty curvature, either through organic causes, or the results of non, or badly united, fractures; in this latter case, it often exhibits a voluminous callus, which, with the foregoing lesions, affords a cause for rejection, but not necessarily for discharge. Unreduced luxations are an absolute disqualification for military service.

SECTION XXXII.

DISEASES OF THE MAMMÆ.

Hypertrophy.

§ 258. Diseases of the mammary gland are sufficiently frequent to merit the attention of the surgeon. Hypertrophy of this gland, coincident or not, with atrophy of the testicle, is sometimes noticed. This abnormal de-

velopment constitutes, when well marked, a cause for rejection, and sometimes even for discharge.

Mammitis.

§ 259. Inflammation of the mammary gland is not infrequent among young soldiers. It may occasion hypertrophy, or induration, and justify a discharge.

Phlegmonous Tumor.

§ 260. Phlegmonous tumors, developed within the tissue of this gland, may be extensive enough to justify the discharge of a party, but rarely his rejection. These tumors are sometimes the result of tattooing, a pernicious practice of common adoption in the army.

SECTION XXXIII.

DISEASES OF THE THORACIC ORGANS.

§ 261. The large number of young soldiers who succumb to pulmonary diseases in military hospitals, particularly to phthisis, owing to the careless manner in which they have been allowed to pass before Boards of Enrolment, should impart additional watchfulness to surgeons when examining them.

Deformity of the Thorax, from Internal Causes.

§ 262. Faulty conformations of the thorax, resulting from internal diseases, which interrupt either respiration or circulation, or prevent the bearing of arms, are absolute causes for rejection or discharge. Thus, for

example, old pulmonary emphysema, imparts to the chest a bulging globular form; in its early stages, however, this disease produces only partial bulging in the subclavian and sterno-mammary regions. Pleuritic effusions often reveal themselves by analogous bulgings of the posterior walls of the thorax. Resorption of these effusions is, on the other hand, frequently followed by retraction of one of the sides of the chest.

Bronchitis and Chronic Pneumonia.

§ 263. Bronchitis and chronic pneumonia, accompanied by wasting, always justify either rejection or discharge.

Pulmonary Emphysema.

§ 264. Pulmonary emphysema necessarily requires rejection. This disease, of frequent occurrence in the army, justifies a discharge only when sufficiently extensive to produce spasms of suffocation.

Phthisis.

§ 265. Threatened consumption and, for still stronger reasons, the fully developed disease, in any stage, well recognized, are disqualifications for military service. This sad predisposition reveals itself through features that are unmistakable to the physician. The chest is narrow, and only slightly muscular around its superior periphery; the shoulder-blades are prominent and detached; the neck is long; the countenance pale or flushed about the cheek-bones; the voice husky, speech hurried, and frequently interrupted by the necessity of breathing; the skin is fine and transparent, or presents a sallow look, and an unnatural dryness; the limbs are emaciated, and covered by lean and flaccid muscles.

In addition to the impressions produced by these *indicia*, judgment must be further enlightened by recourse to percussion, auscultation, and mensuration. Too many proofs cannot be accumulated, on a subject involving such important consequences. Unusual dulness over any part of the chest; absence or modification of the respiratory murmur; inordinate development, or retraction of either side of this cavity, will leave no doubt as to the state of the lungs, or the pleura, and the necessity for a rejection or discharge of the individual.

We must not expect to find all these symptoms united in any one person. The presence of a few characteristic ones should suffice to justify a rejection whenever they establish, not only the confirmed disease, but even a strong predisposition to it.

The fingers and the ear serve for immediate percussio and auscultation. Mensuration should be effected by a tape measure, as described in section 8; but in order to render this element of diagnosis valuable, it is indispensable for the surgeon to bear in mind the different dimensions and relative proportions of a well-formed chest. See section 248.

An important sign, and one too, which, in the midst of the difficulties surrounding percussion and auscultation, can always be determined, is the comparison between the number of respirations and pulsations. The normal standard in adults is about twenty respirations to seventy-two pulsations per minute, or as $3 \div 1$ —.

At a more advanced stage of the disease, uncertainty is impossible, so highly accentuated are all the morbid phenomena.

Sometimes recruits feign weakness of chest by rounding the back, bringing their shoulders forward, and pre-

sending the sternum, apparently depressed; they also affect a dry, frequent cough, and reply to questions with a hurried breath. But it is only necessary to straighten the individual, and to throw back his shoulders, to discover the good development of the thorax; while at the same time the color and elasticity of the integuments, and the volume and firmness of the muscles, will all conspire to expose the cheat. The presence or absence of physical signs will determine the question.

Hæmoptysis.

§ 266. Hæmoptysis, as a symptom of pulmonary disease, is always a cause for rejection. It is also a cause for discharge, when it returns frequently, is accompanied by a persistent cough and marked emaciation, with or without the other physical signs of tuberculosis.

A soldier attacked for the first time by hæmoptysis should be subjected to close observation, for this form of hæmorrhage is often observed to be followed by a rapid development of phthisis, not alone among delicate persons disposed to scrofula, or whose chests are badly formed, but also—and this point cannot be too much dwelt upon—in apparently strong persons having a dark skin, black hair, and a well-developed muscular system.

In rarer cases, hæmoptysis is a symptom of heart disease, particularly of hypertrophy. A thorough and differential examination of the heart and lungs will enable us to establish this diagnostic point. At all events, by reason of its being the result of cardiac lesion, hæmoptysis is not the less serious, and should entail similar consequences to any other symptom of phthisis.

In order to feign it, some persons prick the finger, forearm, or any other part of the body accessible to the lips,

and by suction, fill the mouth with blood, which they void immediately after having feigned a spasm of coughing. Others prick the gums and pharynx,—while some conceal under the tongue or the hollow between the teeth and cheeks, Armenian bole, or a sponge saturated with blood, from which they express variable quantities, and thus redden the saliva. The cheat is easily discovered by passing the fingers through the mouth, and rinsing it out with acidulated water. Moreover, the blood of hæmoptysis is distinguishable by its bright and frothy character; at the termination of the attack it mingles itself with and tinges the bronchial secretions of a more or less deep color, and finally, the real attack always leaves a pallor and prostration, which cannot be simulated any more than the anxious expression, which ever marks the face of the real sufferer.

Pleuritic Effusions.

§ 267. Pleuritic effusions are always a cause for rejection. They do not, however, justify a discharge, until they have resisted all treatment or produced constitutional alterations. Contraction and impaired mobility of one side of the chest, resulting from pleurisy, constitutes a cause for rejection.

Organic Lesions of the Heart.

§ 268. In common with organic lesions of the lungs, those of the heart and large blood-vessels are of difficult detection in their incipient stage. Yet the obstacles they present to the discharge of a soldier's duties, through the rapid development they undergo under the efforts incidental to military life, and the dangers they occasion in

their subjects, render it of great importance that all such persons should be kept out of the army.

No means of exploration should be omitted. Recourse must be had to palpation, in order to discover the frequency, force, extent, and rhythm of the motions of the heart, and the prominence or bulging of the thorax; to auscultation, for indications of the nature and intensity of abnormal sounds; and to mensuration and percussion, which disclose increase in volume and limits of size. At the same time it will be necessary to search out, and to analyze attentively, the disturbances which these lesions may excite in the play of other organs; such as shortness of breath. Slowness or acceleration, or disturbance of the circulation, will reveal themselves through dyspnoea, often one of the first symptoms of heart disease; by the feebleness, force, irregularity, or intermission of the pulse; by the red or livid injection of the capillaries, particularly of the face, and by the distension or pulsation of the jugular veins, etc.

Besides the signs by which to distinguish dilatation of the heart, and of its sac when distended by dropsy—that is to say, besides the extension of precordial dulness, which normally does not cover more than two and a-half square inches,—the other phenomena, viewed by themselves, are far from furnishing precise or irrefragable indications. This statement applies to palpitations, to abnormal sounds, when they are slight and ephemeral, to variations of the pulse, coloration of the countenance, and the other already recited symptoms of cardiac lesion.

In such perplexing cases as these, it is only by the resemblance and the harmony of general and local symptoms, that the physician can arrive at any cer-

tain conclusions. His attention should, above all, be fixed upon the sounds of the heart, upon the relation between the strength of the pulse and the ventricular impulsions, upon the power of these, and finally upon the extent of the region occupied by the organ itself. If any uncertainty still remains, he may clear up all doubts by questioning the party upon his subjective observations of his own condition, in connection with mode of sleeping, violent exercise, and emotional excitement, &c., &c.

Displacement of the Heart.—Transposition.

§ 269. The heart may be displaced, or even totally transposed. This latter condition, which is manifestly congenital, is rare yet occasions no disorder of function; circulation and respiration going on as well with the heart on the right, as on the left side. But the same is not the case when this organ is displaced by a hepatized, or emphysematous lung, a pleuritic effusion, or the development of a morbid growth, or tumor. The simple announcement of these serious conditions suffices to indicate the opinion which the surgeon should form of their consequences.

Endocarditis.—Pericarditis.

§ 270. Acute inflammation of the heart (endocarditis), or of its sac (pericarditis), is always a cause for rejection, and often for discharge, on account of the structural alterations which it induces. Hydro-pericardium is always a cause for rejection or discharge.

Hypertrophy.

§ 271. Hypertrophy of the heart is an absolute dis-

qualification in a recruit, and also requires the discharge of a soldier, when ordinary means of treatment have proved unavailing.

During an examination the recruit is generally excited, and the motions of the heart increased, so as to mislead one into the belief that hypertrophy is present. It may not therefore be out of place to repeat some of the physiological and pathological details, applicable to a diagnosis of this disease. In health, the intercostal muscles situated between the *fifth* and *sixth* ribs, are raised by the apex of the heart during systole, over an extent of from half an inch to one inch. In hypertrophy, these movements are much more extensive, and may include several ribs and intercostal spaces. Precordial dulness, which, in a normal state, occupies a space of two square inches, may extend itself over one of four.

Adhesion of the Pericardium.

§ 272. Friction murmur of the pericardium, indicating an altered condition of the surface of this membrane, should always cause rejection, whenever recognizable by auscultation. It should also occasion the discharge of a soldier, if accompanied by disturbances in the heart's action, and irregularity or intermission of the pulse.

Narrowing, or Insufficiency of Valves.

§ 273. Valvular sounds ordinarily announce serious lesions; rough sounds, accompany contractions of the auricular-ventricular orifices; soft ones, valvular insufficiency.

Lesions of Cardiac Orifices.—Dilatation, with Thinning.

§ 274. Purring murmurs reveal a lesion of the cardiac

orifices. Increase of precordial dulness, accompanied by feebleness of the heart's contractions and without strong impact of this organ against, nor raising of the intercostal muscles, indicates dilatation with thinning of its walls. The foregoing different conditions, as also the succeeding ones, necessarily require the rejection, or discharge of a party.

Cyanosis.

§ 275. Cyanosis, which is often an indication of the persistence of the foramen ovale, is, when congenital, beyond the reach of art.

Facial cyanosis may be produced by the application of a ligature about the base of the neck, and hidden among the folds of the skin. But in such cases there is injection and not true cyanosis, and the cheat is too clumsy to require any further notice.

Lesions of the Thoracic Aorta.

§ 276. Diagnosis of lesions of the thoracic aorta, is in most cases obscure. Yet aneurism may be suspected from the whistling of the voice, flatness of sound, on percussion over the middle and superior portions of the sternum, by the feebleness and irregularity of the pulse, and its inequality between one arm and the other. All these are *indicia* of a tumor, compressing arterial trunks, or their branches. It may also be recognized by a thrilling, or purring tremor, felt by the hand when applied to the sternum, and particularly by the simple pulsations, accompanied by a bellows murmur heard in the track of the artery. When the aneurism is situated in the ascending aorta, the pulsations are detected beneath the sternum and the cartilages of the ribs, with a

distinctness corresponding to the volume of the tumor. They differ from the first sound of the heart by a greater intensity, besides which, their true initial point may be recognized in passing the naked ear, then the stethoscope, successively from the point where the sound is heard, up to the heart, and back again. If the pulsation arises from aneurism of the aorta, it will grow weaker as we approach the heart, and *vice versa*. Aneurism of the descending aorta, may be recognized by a simple, strong pulsation, distinct from the double pulsation of the heart, and from the fact that this latter never extends itself with similar intensity, as far as the back, besides which a rasping or bellows murmur will be heard and abnormal dulness perceived.

Asthma.

§ 277. Shortness of breath, produced by certain diseases of the pulmonary or circulatory organs, sometimes extends to the degree of asthma, a disease which in itself, is a disqualification for the military service. When asthma is thus dependent upon organic lesion, it is ordinarily continuous, although varying in intensity according to circumstances. The examining surgeon can consequently witness its manifestations, and comparing its symptoms with the other signs of visceral alteration, he will find, in their combination, the basis for his opinion. He should above all things, not omit an examination of the lungs, heart, and aorta. There is, however, a species of asthma (nervous asthma), which belongs to no organic lesion, and which only reveals itself, ordinarily, by nocturnal paroxysms of variable frequency. Among soldiers the reality of this disease, which cannot be feigned, may be ascertained in the hospital; but it should never be

admitted in the case of recruits, except upon proof obtained for that purpose.

SECTION XXXIV.

DISEASES OF THE SPINE.

Deformities.

§ 278. Deformities of the spine originate either in an organic alteration of the vertebræ themselves, or in a defective equilibrium between the different motor forces, which act upon the column which they compose.

• Curvatures of the Spine.

§ 279. These deformities may be either congenital, acquired, or symptomatic of Potts' disease. The spinal column, under the influence of the forces which move it, may be curved forward, backward, or laterally. Such deformities involve absolute incapacity for the duties of a soldier, either because they may compress the spinal cord, and give rise consecutively, to alterations in functions over which this organ presides; or they may interrupt the action of the thoracic viscera, and predispose them to serious lesions; or finally, because they deprive the soldier of the freedom and precision of those movements which are necessary, and because they also occasion great hindrance to equipments. But the different curvatures spoken of may be feigned or artificially produced. Men occasionally present themselves with excessive curvature of the spine, the

chest hollowed in, and pretending that they are unable to straighten themselves. This cheat may be exposed, either by placing the man on the floor, face downwards, tightly compressing his loins with a belt, and then stretching his arms out over his head; or else, placing him upon his back, and removing all points of support for his extremities.

Lateral curvatures are more easily feigned. They may be initiated through muscular action alone, by assisting this with mechanical agents, tending either to curve directly the vertebral axis, or to displace the relations of the pelvis, and consequently those of the flexible column which it supports, together with the centre of gravity. Such may be the success, that the simulator, contrary to his intention, remains permanently hump-backed, and this, too, without any advantage, for it is not impossible to distinguish feigned or artificially-produced curvatures from spontaneous ones. The latter, as a first characteristic, have a tendency to attack a variety of points, and to assume a variety of forms, and being as diversified as the particular cases themselves, may occupy any region of the spine. Again, no real deformity of any extent is ever seen having but one curvature; there are always two or three, and sometimes four alternately, when they are produced in order to maintain, by counterbalancing, the axis of the trunk in the line of gravity. Each curvature is always accompanied by a twisting movement of the vertebræ, proportional to its arc and chord. This torsion impresses upon the muscular prominences, on either side of the median line, at the projections of the ribs and shoulders, a noticeable want of symmetry, according to the number, the seat, and the degree of the curvatures. At each curva-

ture, there is a corresponding elevation of the muscles of the ribs and of the shoulder-blade of the convex side, while the concavity is marked by a depression of all its included parts. There are no furrows formed by the wrinkling of the skin, unless the deformity is very extensive, and then they are ordinarily shallow, on account of the retraction of the skin, which in the end always effaces them. These furrows occur in the majority of instances, just below the axilla, and then the chief curvature has its convexity on the opposite side, and in the dorsal region. If, as an extraordinary thing, they are located between the floating ribs and the crest of the ilium, there will be a dorso-lumbar curvature, with extensive uplifting of the ribs and muscles, corresponding to the convexity. There may finally exist a well-marked furrow on a level with a lumbar curvature, without extensive torsion of the vertebræ included in that region, while another furrow corresponds on the opposite side to the dorsal curvature. In such an exceptional case, the dorsal curvature is extensive, descends to the last vertebræ of this region, and is accompanied by a high degree of torsion which raises the last ribs, and produces a depression, with wrinkling of the skin, above the crest of the ilium. Hence, in those rare cases where the real deformity is accompanied by wrinkles of the skin, there is necessarily extensive curvature, and torsion of one or the other side, with consecutive bulging of the muscles and ribs, and lateral, dorsal, or lumbar deformity. Finally, if the hips are no longer on a level, one never differs from the other by more than a few lines, unless there be proportional inequality in the length of the lower limbs.

When the disease is feigned, whatever may be the

means employed, the same external appearance is always remarked, viz.: a single lateral curvature, describing a regular arc, which invariably includes the dorsal and lumbar regions, with lateral inclination of the column upon the pelvis; and such is the sameness and uniformity with which these effects constantly reproduce themselves, that it is next to impossible not to recognize the fraud. The trunk is more or less inclined to the side opposite the convexity, according as the pelvis is more or less elevated on this side, or depressed upon the other. The degree of curvature, which takes place on a large radius, is not in harmony with the degree of inclination of the trunk, whose superior extremity departs widely from the vertical line, this inclination not being counterbalanced by any counter curvature. Within this curvature, and between the floating ribs and the crest of the ilium, the skin of the hip exhibits two or three parallel folds, the shoulder of the side corresponding to the convexity is much more elevated than the other, but both exhibit the same prominence in the rear, together with the ribs, and the two surfaces of corresponding muscles; in other words, there is no trace of torsion. The hips, according to the means employed, may remain on a level, or that of the concave side be raised from two to three and a half inches, and in such case, the corresponding limb appears proportionally shortened; there is also a semblance of limping, which does not occur in the real deformity. These curvatures can only be maintained by the exclusive power of the will, during standing, sitting, or marching.

They may also, when long maintained by mechanical agents, continue permanent, and constitute a real exciting cause whose effects vary, according to the agencies em-

ployed in its production, and which it is here needless to enumerate. It suffices to say that:

1st. When it has not been protracted, the action of these agencies, impresses upon the spine none of those characteristics of multiple or alternative curvature, and of torsion of the vertebræ, which distinguish true deformities.

2d. Even after their application, and their long-continued use, the most ingeniously combined means of provocation, although they may have occasioned alternating curvatures, yet do not produce torsion, and reveal through this fact, and the special, always identical form of the curvature, the means of distinguishing the feigned from the real disease.

The diagnosis being established, if the deformity, whether of spontaneous or provoked origin, has now become permanent, the party must be rejected or discharged.

Potts' Disease.

§ 280. This affection is one of very serious consequence, in a military point of view. It reveals itself by a prominence and bulging of the spinous process, corresponding to the vertebra which is its seat, and sometimes by the presence of cold abscesses, at varying distances from this point. In its incipient stage patients are themselves often ignorant of the existence of local lesion, and do not complain of these secondary effects. In order to discover the disease, the patient must be made to bend forward, while the hand is passed over the spine, to test its sensibility, and to examine critically any abnormal protuberances or depressions which may be encountered. There can be no doubt as to the decision proper in such cases.

Abscess.

§ 281. Large dorsal abscess, if it does not terminate by resolution, may occasion the most serious consequences, by reason of the suppuration which accompanies it. It should always be a cause for rejection, and often for discharge.

Carbuncle.

§ 282. Of the various tumors which may occur in the back, we shall only mention *anthrax*, or carbuncle, as among those often seen, and which should cause rejection, when extensive; but would only justify a discharge through its possible consequences.

SECTION XXXV.

DISEASES OF THE LUMBAR REGION AND OF THE ABDOMEN.

§ 283. Partly connected with diseases of the back, especially with its deformities, diseases of the loins are yet, on many accounts, entirely distinct from them, in a military point of view.

Spina Bifida.

§ 284. The only deformity deserving of notice, on account of the special character of its seat, is hydro-rachitis, or spina bifida, which is congenital, and sometimes continues up to puberty, though very rarely, up to adult age. It constitutes an absolute disqualification for the duties of a soldier.

Lumbago.

§ 285. Lumbar rheumatism, or lumbago, is usually a trifling affection, yet it sometimes masks serious disease, either of the spinal column, of the cord, or of the kidneys. It becomes therefore necessary to explore its seat with the greatest attention, in order to establish a correct diagnosis, and not to confound these pains with ostitis, caries, necrosis, or disease of the kidney.

The surgeon should always remember, that chronic rheumatism is often feigned; whence the greater reason for examining carefully the region in which it is alleged to exist. When the disease is real, whether it be a rheumatism, or a more serious lesion, the lower limbs are frequently wasted, with more or less paralysis of sensation or motion, and traces of the external treatment, to which they have been subjected, by leeches, cups, moxas, cauterizations, &c., may at times be discovered. These cases, when well marked, always require the rejection, and frequently the discharge of a party.

Lumbar Hernias.

§ 286. Lumbar hernias are very rare; still, it is well to understand their possibility, and to be able to diagnose them.

Psoas Abscess.

§ 287. Psoitis, or inflammation of the psoas muscle, is a serious disease, rarely terminating in resolution. The two foregoing diseases are always causes for rejection, and frequently for discharge.

Diseases of the Abdomen.

§ 288. The abdomen, in its normal state, should be

uniformly soft and elastic, moderately developed, and exhibit no irregular prominences, either externally, or on palpation, however deeply pressure may be made. Exploration by palpation, is extremely important, whenever the complexion of the skin, or any peculiarity in the external appearance, suggests the existence of visceral lesion. Percussion, with whose details the physician should be familiar, also furnishes important indications. (*Vide* Auscultatory-Percussion Chart.)

Contusions.

§ 289. Contusions of the abdomen may produce effects of variable intensity. Their consequences, in the form of ecchymosis, whether circumscribed or diffused, occasionally give rise to extensive abscesses, which spread between the muscular or superficial fascia, and are of very serious character. Whenever such a case presents itself, particular attention must be given to the extent of the ecchymosis, the depth of the contusion, the seat, nature, and intensity of the pain experienced, and whether constantly, or only on pressure. There can be no doubt as to the proper decision, whenever the diagnosis shows that the contusion has involved the internal viscera, stomach, bowels, liver, spleen, &c.

Traumatic Peritonitis.

§ 290. Local traumatic peritonitis, being liable to be followed by serious disorders, even involving life, such as adhesions, internal strangulations, &c., &c., is a cause for rejection, wherever it may be situated.

Wounds.

§ 291. Non-penetrating wounds of the abdomen are

of trifling importance, unless they have been followed by loss of substance, weakening its walls, and predisposing to hernias or adherent cicatrices. These last always constitute a cause for rejection, and often for discharge. The same decision applies to scars following surgical operations. *Penetrating* wounds acquire their importance from the visceral lesions they occasion, and which are recognized by variable signs, according to the nature and functions of the wounded organs.

Hernia.

§ 292. The umbilicus, the median line, the groin, and the femoral region, are, among men, the most common localities for hernia. Other forms of this disease, though extremely rare, are also known, such, for example, as ischiatic, obturator, diaphragmatic, or lumbar hernias.

Inguinal hernia is much the most common of all. Whether easily reducible or not, recent or of long standing, simple or complicated, every form of abdominal hernia must be considered a cause for rejection, on account of the numerous inconveniences which constantly attend it, and the dangerous complications to which it may give rise; such, for example, as adhesions, dropsy of the sac, obstruction, inflammation, strangulation, and gangrene—all which are especially liable to occur during the period of life occupied by military service, and to be produced by its various contingencies.

Rejection should even be made of those, who, although not suffering from complete hernia, yet present a well-marked tendency to it, characterized by the following conditions, viz., dilatation of the inguinal ring; relaxation and weakness of the inguinal canal, together

with that of the corresponding portion of the anterior abdominal wall.

This predisposition to hernia, can, at times, only be discovered by a most critical examination; yet the subject is of so much importance as to merit all the attention of the surgeon. When the foregoing characteristics are plainly perceived, they leave no room for doubt. Among soldiers, predisposition alone does not justify a discharge; the existence of the disease must be confirmed, whatever may be its degree, from that of a commencing bubonocoele, to complete eventration.

Hernia cannot be feigned. It is well to be reminded, however, that deceivers have sometimes attempted to practise imposition in this particular, by wearing a truss (old or much worn), although no appearance of hernia existed.

Hernia may be concealed; whence it becomes necessary not simply to examine the course of the median line, the inguinal, and crural regions, and to apply the hand over their corresponding openings, while the party is made to cough; but also, in pushing up the scrotum, to carry the finger into the inguinal ring, in order to ascertain the fact of its dilatation, and whether some portion of viscera, descending into the canal, does not present itself at the orifice. It is well, also, to make the party lift a weight at arm's length.

Fistulas and Artificial Anus.

§ 293. Abdominal fistulas are absolute causes for rejection or discharge, whenever they manifestly communicate with the cavity of the peritoneum, or one of the viscera. Hence, simple, serous, or puriform fistulas, consequent upon the presence of foreign bodies, or an acci-

dental perforation, produce this double consequence, less from the fact of the fistula itself, than from its origin, and the chronic character of the disease upon which it depends. The same rule will apply, for a much stronger reason, to compound fistulas, having their seat in some particular region of the abdomen, and originating either in the stomach or intestinal canal, and permitting the escape of alimentary, chylous, or fæcal substances; these last form, when narrow, stercoral fistulas, and constitute, when large, the disgusting infirmity known as *artificial anus*, an opening sometimes of accidental and traumatic nature, or resulting from gangrene of a strangulated hernia—sometimes artificially produced, in order to remedy an intestinal obliteration, either congenital or acquired.

The same rule will apply to hepatic, or biliary fistulas, which are very rare; as also to urinary fistulas of the kidney or bladder.

Tumors.

§ 294. Palpation and percussion serve to discover deep-seated tumors, enlargement of the liver and spleen, which are chronic lesions, with or without general constitutional symptoms indicating their severity, but whose presence leaves no doubt as to the disqualification of their subjects. Nevertheless, when such tumors exhibit themselves in soldiers, no discharge should be granted, until treatment has proved unavailing.

Simple stercoral tumors, the nature of which it is very important to recognize, are not, properly speaking, a disease.

Inguinal Tumors.—Deep-seated Abscess.

§ 295. Deep-seated abscess of the iliac fossa, is always

a cause for rejection. Inguinal abscesses are often symptomatic of caries; they are at times stereoral or urinary. All these affections, which necessitate both rejection and discharge, might, through carelessness, be mistaken for hernia.

Adenitis.

§ 296. Inguinal adenitis is frequent, and often of syphilitic origin. When associated with enlarged cervical glands, it indicates serofula, or syphilis, and may require the rejection of a party, through the diseased bodily condition which it reveals.

Infra-inguinial adenitis is symptomatic of superficial mechanical lesions of the leg, or foot, and may be looked upon as a trifling disease.

Syphilitic Adenitis (venereal bubo) may become a cause for rejection or discharge, according to the extent and severity of the constitutional symptoms which it has occasioned.

By means of an insufflation of air into the cellular tissue, an inguinal tumor might be produced, but only so as to deceive a superficial observer.

Chronic Inflammations.

§ 297. Chronic inflammations of the stomach, bowels, or peritoneum, invariably exhibit a series of symptoms, which it is useless to rehearse in this connection. These diseases, although often curable, always constitute a cause for rejection. They justify a discharge only when treatment has proved unavailing.

Distension.

§ 298. Many of the foregoing diseases occasion a dis-

tension of the abdomen, or tympanitis, which has sometimes been imitated by individuals, possessed of the rare faculty of swallowing air in sufficient quantity to produce enormous distension of the abdomen. Palpation and percussion will generally suffice to determine its cause.

Vomiting at Will.

§ 299. Other persons naturally possess, or have acquired, the faculty of vomiting at will, and endeavor, by this means, to appear as if suffering under chronic lesion of the stomach.

Hæmatemesis.

§ 300. Others, again, complain of habitual vomiting of blood, and in order to make good their assertion, feign this hæmorrhage by ejecting, in the presence of the surgeon, a quantity of blood, secretly swallowed beforehand. In all these cases which, if real, would necessarily be complicated with marked constitutional disturbance, the general bodily condition of the parties, and absence of emaciation—two unequivocal signs of health—would strongly testify against their allegations.

Hypertrophy of the Liver and Spleen.

§ 301. Chronic enlargement of the liver, cancer, abscess, and hydatids which often have their seat there, when proved to exist, are causes for rejection or discharge.

Abscess of the Spleen.

§ 302. The same rule will apply to abscesses of the spleen, which are rare, and to its abnormal enlargement (ague-cake), which accompanies, nearly always, malarious cachexy. Nevertheless, the last named does not

justify a discharge, until curative treatment has proved unavailing.

In malarious districts, slight hypertrophy of the abdominal viscera cannot be considered a disqualifying circumstance, since removal from the sources of endemic influence, is the most successful method of overcoming it, as happens with those removed from *goitrous localities*. Changes of climate, modifications of diet, and removal of the exciting cause, generally restore the organ to its natural state. In particular instances great attention should be paid to the general bodily condition of the party; his local disease is only a subordinate consideration.

Biliary Calculi.

§ 303. Calculous tumors of the gall-bladder are absolute causes for rejection or discharge.

Icterus (Jaundice).

§ 304. Jaundice is of varying importance, according as it is idiopathic, or symptomatic of disease of the liver. In the former case, it is a trifling and temporary disease; in the latter case, the decision must be based upon the original disease, as presumed or recognized. Jaundice may be clumsily feigned, but the sclerotic could not be colored, and this circumstance alone would suffice to expose the cheat.

Tænia (Tapc-worm).

§ 305. *Tænia*, and other intestinal worms, are not a cause either for rejection or discharge.

SECTION XXXVI.

DISEASES OF THE PELVIS.

Congenital Deformities.

§ 306. Congenital deformities of the pelvis are rare among men ; nevertheless it may be of inordinate size or extreme narrowness. These organic conditions justify the rejection of a party, whenever they are sufficiently marked to exercise any influence upon the internal organs or the lower limbs.

Relaxation of the Symphyses.

§ 307. Among mechanical lesions, need only be cited relaxations of the symphyses, which may follow certain forms of external violence, and constitute an absolute disqualification for the duties of a soldier.

Sprain or Luxation of the Os-Coccygis.

§ 308. Sprain or luxation of the coccyx being easily reducible, and leaving no consequences, would only justify rejection in very exceptional cases.

Wounds.

§ 309. Accidental or artificial wounds of the perineum, if they remain fistulous or unhealed, constitute, in such case alone, a cause for rejection ; but not for discharge, unless they are of long standing, or complicated with other lesions.

Lacerations.

§ 310. Lacerations of the perineum are the result, in

men, of external violence, and are ordinarily so slight and superficial, as to leave no results disqualifying a party for military service. The presence of any evidence of past extensive contusions should occasion an examination for stricture.

Fistulas.

§ 311. Fistulas, resulting from mechanical lesions, surgical operations, or open tumors in this region, are either purulent, stercoral, or urinary; each one distinguishing itself by special signs, which can leave no doubt as to the proper decision to be given.

Tumors.

§ 312. The tumors most common to this region are the hæmatic, resulting from contusions or collections of blood, pus, or fæces; abscesses depending upon caries of the ischium, calculous tumors (rare), and perineal hernia, properly so called (not less rare), formed between the rectum and the bladder, and requiring careful exploration to discover it. These tumors, which cannot be feigned, and are of difficult treatment, always constitute a cause for rejection; their degree of development will indicate the necessity for a discharge.

SECTION XXXVII.

DISEASES OF THE ANUS AND RECTUM.

§ 313. The lower part of the rectum and the anus are, of all portions of the bowels, those which present the

greatest number of diseases deserving the attention of examining surgeons. A critical examination of this orifice, of the folds of the sphincter, and of the discharges liable to flow from these parts, should be made. Many of the diseases having their seat there can be feigned, which affords an additional reason for paying the greatest attention to their diagnosis.

Traumatic Lesions.

§ 314. Contused wounds, lacerations, and perforations of the anus and rectum, are at times followed by deep cicatrices, or, on the contrary, by incomplete cicatrization, which may occasion either retention or incontinence of fæces. Rejection of the party should be made, only when well-marked signs of one or the other of these conditions are established.

Foreign Bodies.

§ 315. Foreign bodies originally swallowed, and lodging in the rectum, or introduced there, accidentally or wilfully, can ordinarily be extracted. They serve at times to counterfeit diseased conditions which it is always necessary to recognize.

Worms.

§ 316. As to those verminous affections which have their seat near the anal orifice, they afford neither cause for rejection nor discharge.

Syphilis.

§ 317. Syphilitic diseases of the rectum and anus, such as purulent discharge, ulcerations, fissures, mucous pustules, condylomata, and warty growths, are curable in

common with the parent disease, and therefore not incompatible with the duties of a soldier.

Various Affections, Fistulas, &c.

§ 318. The same rule will apply to simple inflammation of the anus, to simple neuralgia, and furunculous or idiopathic abscesses of the margin of the anus. But deep-seated abscesses, or those symptomatic of caries of the sacrum or ischium, simple fistula ani, if complete, are causes for rejection and sometimes for discharge.

Spasmodic contraction and fissures of the anus, spasmodic contraction of the sphincter ani, when existing in a simple state, cannot be recognized by the examining surgeon, because no positive sign, appreciable to the senses, accompanies it. Spasmodic stricture, dependent upon fissure, or irritable ulcer, will most ordinarily be distinguished with ease by the recognition of the fissure itself, whose lower extremity can be generally detected by separating the folds of the anus. These affections, which are not very common among young men, should be considered in the light of inconveniences rather than diseases. They always yield to a simple surgical operation which the patient can long avoid, if he prefers to suffer during, and for some time after, defecation. Consequently, simple spasm of the anus never is a cause either for rejection or discharge; fissure could only justify rejection, if very deep, multiple, of malignant aspect, and particularly if connected with some existing lesion of the lungs. It should never authorize a discharge until, by its complications, it has successfully resisted all surgical treatment.

Stricture of the Rectum, Cancer, &c.

§ 319. The anus and the rectum are, to a distance within reach of the finger, sometimes narrowed by hard, scirrhus, annular swellings, or by tumors, of various nature, arising from the walls of the bowel, or acting upon these by compression from without. When these diseases exist about the anus, or have extended to its orifice, they are easily recognized by sight and touch; at other times, touch, combined with the speculum, can alone establish the existence of the disease. In such case, if the interior of the bowel is explored, there will be felt at more or less distance from, sometimes at the anus itself, a resistant ring, of fibrous character, which it is impossible or very difficult to pass. Manipulation is at times painful, at other times nearly imperceptible. The diseased part is occasionally smooth, hard as it were, callous, and covered with granulations, which the least touch causes to bleed. The altered portion appears movable and surrounded by healthy, and detached cellular tissue. These diseases are always of serious character, and afford, when well marked, causes for both rejection and discharge.

Hæmorrhoids.

§ 320. The anus may be the seat of hæmorrhoids, which in the form of internal or external tumors, ulcerated or not, are a cause for rejection; while they do not necessarily justify a discharge. In the latter case, collateral circumstances should guide the judgment, as well as the principal fact. It will be necessary therefore, to investigate the amount of inconvenience which it causes in defecation; and, under other circumstances, the influence of the loss of blood upon the general

economy, the amount of prolapsus, the difficulty experienced in reducing the tumor, together with its liability to come down; upon exertion. These considerations will determine the expediency of retaining or discharging a soldier. As to periodical loss of blood, without either internal or external tumor, it affords no ground for rejection, until shown to exist by indubitable proofs, such as anæmia, &c. It is unnecessary to mention the gross practices by which hæmorrhoids are feigned, as they never can deceive an examining surgeon.

Procidentia of the Mucous Membrane, and Prolapsus of the Rectum.

§ 321. Old ulcerated piles, or other causes, such as extensive relaxation, or loss of substance, or paralysis of the sphincters and levator ani, may occasion procidentia of the mucous membrane of the rectum through the anus. The importance of this disease varies according as the tumor is reducible after defecation, by the patient himself, or is large, difficult to return, and to maintain within the anus; liable to reappear on slight effort being made, or continues permanently external, which then constitutes prolapsus of the rectum. Simple procidentia, which does not effect the general health, is not a cause for rejection or discharge. But permanent prolapsus of the rectum always constitutes an absolute disqualification for the duties of a soldier.

Incontinence of Fæces.

§ 322. Whether or not, accompanied by prolapsus, paralysis of the rectum always occasions incontinence of fæces, and besides, is generally complicated with

other serious disorders, producing similar disqualifications in its subjects.

SECTION XXXVIII.

DISEASES OF THE URINARY PASSAGES AND ORGANS.

Incontinence of Urine.

§ 323. Diseases of the urinary passages, which should be studied in the light of possible obstacles to the discharge of a soldier's duties, are not less numerous nor less important than those of preceding regions.

Incontinence of urine although rare, is often alleged before examining surgeons. It may be considered feigned, whenever it cannot be explained by an abnormal and excessive dilatation of the urethra, by the presence of vesical calculus, by external traces of a serious wound, or operation, or when it is unaccompanied by a feeble and prostrated condition of the system, forming of itself, a disqualification for the duties of a soldier. The sexual organs and the surrounding parts present a peculiar aspect in the really incontinent, and which is not met with in malingerers. It is moreover easy to detect this simulation when it applies to *permanent* incontinence. In such cases it is only necessary to cause the patient to pass water, and to notice how it escapes from the meatus; if the incontinence is real, the urine passes drop by drop, precisely as secreted, and without any effort on the part of the subject, or muscular contraction; in the opposite case, the urine

passes with a sensible jet, and by means of efforts which it is easy to notice. *Nocturnal* incontinence presents more difficulties, because alleged to occur only during sleep. But an acquaintance with the various causes of real incontinence, enables one, in most instances, to discover the signs of the affection when feigned. These causes, frequently of mechanical origin, depend upon an accidental lesion or a local affection of the bladder, or the urethra; or else are symptomatic of alterations of vital properties, following, for example, certain acute diseases with nervous prostration; or arise simply from weakness and relaxation of the neck of the bladder. Deception can nearly always be discovered by placing the subject at bedtime under the influence of opium, having first disposed him to drink copiously through the day, by strongly salting his food. On visiting him during the night, his bed will not always be found wet, and on emptying the bladder with a sound, more or less urine will be drawn off.

Finally, incontinence, when purely symptomatic of well-marked local disease, is always a cause for rejection, and often for discharge. But the same is not the case with permanent or nocturnal incontinence, because this disease, which is very rare, as before said, resulting, in most cases, from indolence and defective training, is, in general, easily curable by means of vigilant supervision, even if it does not terminate spontaneously.

Retention of Urine.

§ 324. Retention of urine, of which dysuria is only a minor degree, notwithstanding its frequency and serious character, rarely comes before examining surgeons. Yet, at times, it is seen when in an incipient stage, or

when disposed to yield to regular catheterism. It may be feigned, or artificially produced; but with difficulty, since the least pressure on the hypogastric region would tend to overpower the resistance or contraction of the neck of the bladder, and to empty it instantly.

The protuberance formed by the distended bladder might be mistaken for another disease, as for example, an encysted tumor, or even ascites. Catheterism will at once determine the diagnosis. But if the obstacle to passing water arises from an organic cause, and particularly from stricture of the urethra—a rather rare thing among young men—the retention, whether actually existing, or only possible, is a cause for rejection. This disease is too often curable to justify a discharge, unless in very exceptional cases.

Diabetes.

§ 325. Well-marked diabetes is an absolute cause for rejection or discharge. But this complex disease, of rather rare occurrence in young men, may present at the outset doubtful signs, and such as are difficult to recognize.*

* The following tests are easily applied to diabetic urine, and should be accordingly resorted to:

Moore's test.—Boil equal quantities of the suspected urine and liquor potassæ, in a test-tube, when, if diabetes exist, the solution assumes a claret color, of more or less depth, according to the quantity of sugar present.

Trommer's test.—In a large test-tube, mix, with some of the suspected urine, just enough of a solution of sulphate of copper to give it a faint blue tint. Then add liquor potassæ in considerable excess. If sugar be present, a precipitate of hydrated oxide of copper first falls, which is redissolved in the excess of alkali, forming a dark blue solution. If this be gently heated to ebullition, a dense deposit of red suboxide of copper takes place.

Hæmaturia.

§ 326. Hæmaturia, or bloody urine, is rather a serious disease whenever it originates in the kidneys or in the bladder, and is not simply of a temporary character. It is of rare occurrence, however, among young men. Besides traumatic causes, hæmaturia may result from the suppression of an habitual hæmorrhage, epistaxis for example, or depend, although more rarely, upon a scorbutic affection, or the hæmorrhagic diathesis. In these cases, rejection or discharge must follow.

Albuminuria.

§ 327. Albuminuria, which can be certainly ascertained by the use of proper means, is an absolute disqualification for the duties of a soldier.*

Urinary Calculi.

§ 328. Urinary calculi, whether originating in the kidney, under the form of *gravel*, or whether formed in the bladder, or lodging themselves in the prostate or the urethra, present ordinarily very characteristic signs, but which nevertheless require an attentive examination. Their presence, when well established, requires the rejection of a party, and even his discharge, if he will not submit to the necessary operations.

Urinary Abscesses.

§ 329. Urinary abscesses and fistulas, whatever may be their seat, always require the rejection of a party, and his discharge, when the complications of the fistula necessitate a long treatment whose results are uncertain.

* Heat, nitric acid, and microscopical examinations of the urinary sediments, will determine the existence of this disease.

Mechanical Lesions of the Kidneys.

§ 330. Diseases of the kidney require practical experience in palpation and percussio, the sources which, together with microscopical examinations of the urinary sediments, furnish the principal signs of their existence. Congenital lesions of the kidney are not amenable to examination.

These organs may, in common with the others, be the seat of various mechanical lesions, such as contusions and concussions, which it is often difficult to discover, and wounds or lacerations, which frequently require the rejection of a party, though more rarely his discharge. Foreign bodies, introduced by external violence, may remain lodged in their substance. Whenever their presence is recognized, they constitute an absolute incapacity for the duties of a soldier.

Nephritis.

§ 331. Inflammation of the kidneys, of which it is important to establish the diagnosis, in order not to mistake it for diseases of less gravity (such as lumbago), may be simple, traumatic, albuminous, calculous, rheumatic, gouty, or purulent (the result of resorption), in character. These all constitute causes for rejection, and often for discharge.

Renal Calculi.

§ 332. Urinary calculi, which are suspected, for the most part, only from the violent pains attending them, particularly in their passage through the ureters, but of which no certainty exists until their escape from the urethra, are always a cause for rejection or discharge.*

* The fact of having once passed a urinary calculus does not afford presumptive evidence that another is likely to follow, or the diathesis to continue, upon which its existence depends.

Abscesses.—Fistulas.

§ 333. Renal abscesses and fistulas, tumors, cysts, and cancer, are causes for rejection, but not necessarily for discharge.

Diseases of the Bladder.

§ 334. The importance of the bladder is such, that all diseases capable of affecting it are of a serious character, and deserve particular attention; nor are they the less worthy of study on account of their extreme frequency.

An examination of this organ by direct palpation will reveal its condition of fulness or emptiness; catheterism alone can give correct ideas of some of the lesions of which it is the seat; while examination of its excretions is indispensable as a means of diagnosis.

Absence of the Bladder.—Extrophia (extroversion).

§ 335. Complete absence of the bladder is very rare; yet it has been observed.

Extrophia, or extroversion, of this organ, exhibits itself in the form of a loss of substance of the inferior portion of the walls of the abdomen, and by the presence of a red, moist surface, on which the ureters are sometimes seen, allowing the urine to escape directly.

Atrophy of the bladder has occasionally been mistaken for its absence.

The foregoing diseases are all manifest disqualifications for the military service.

Hypertrophy.

§ 336. The bladder may also be hypertrophied, and occupy a large space in the abdomen. It may also open into various abnormal localities through imperforations of

the ureters, as for example, through the umbilicus with persistence of the urachus, or through the rectum. These cases are extremely rare; still, it is well to be apprised of their possibility. It is almost needless to add, that they constitute a cause for rejection.

Traumatic Lesions.

§ 337. The bladder may be the seat of contusions, of compressions, if full, of rupture, and of wounds of various nature, particularly gunshot. These lesions are so immediately serious in their nature as rarely to come before examining surgeons. If any should present themselves, they would constitute a cause for rejection, but not of discharge, until surgical treatment had proved unavailing.

Foreign bodies sometimes find their way into the bladder, either through wounds or catheterism (fragments of a sound). These form constant causes for rejection, but not of discharge, until all attempts at extraction have proved abortive, or serious disorders have been produced by such bodies.

Vesical Calculi.

§ 338. Vesical calculi reveal their presence by pain, a sense of weight at the lower part of the bladder, turbid urine, sometimes purulent, sometimes sanguinolent, intermission in the flow of the urine, and pain at the extremity of the penis; but the only true pathognomonic sign is furnished by the sound.

Paralysis.

§ 339. Paralysis of the bladder, of which atony constitutes the first stage, arises nearly always from lesion of some other organ, particularly of the spinal cord.

This disease, of easy recognition, by its own characteristics, and those of its parent source, derives all its importance from the diseased condition of the latter.

Cystitis.

§ 340. Inflammation of the bladder, whether acute or chronic, is always a sufficiently serious disease to require the rejection of a party. Nevertheless, it must be borne in mind that this disease may be artificially produced by partaking of certain substances well known to physicians. It is, therefore, important to assure one's self that the inflammation is not due to this cause, for in such case it is trifling, and occasions no disqualification.

Hydatids.

§ 341. Hydatids, although rare, are at times met with in the bladder. Their presence, when duly established, constitutes a disqualification for the duties of a soldier.

Vesical Fistulas.

§ 342. Gangrene, wounds, operations for puncture, or lithotomy, sometimes leave behind them urinary fistulas, which are always a cause for rejection.

Hernia.

§ 343. Hernia of the bladder may occur in various directions, constituting either abdominal, inguinal, or perineal cystocele. These are all causes for rejection or discharge. The same rule will apply to a varicose state of the neck of the bladder, to polypi, fungous growths, etc., which are at times observed, though very rarely in young men.

Diseases of the Urethra.

§ 344. It is more particularly to diseases of the urethra, that catheterism applies as a means of diagnosis. Direct examination by the hand must not be neglected, as it enables us to discover foreign bodies lodged in the corpus cavernosum, together with any protuberances formed by structural alterations.

Simple inspection suffices to detect diseases situated in the vicinity of the meatus; while a catheter or sound is necessary to explore the deeper portions of this canal.

Anomalies.

§ 345. The urethra may be entirely wanting, imperforate, or turned from its normal direction. The two first anomalies would require the rejection or discharge of a party, while a simple deviation might not.

Hypospadias.

§ 346. The urine may be voided in an abnormal way, as, for example, in hypospadias, epispadias, and fistulas. In hypospadias, the opening occurs either at the fossa navicularis, near to, or corresponding with, the frænum of the prepuce, or between this point and the scrotum, or in the scrotum itself.

In epispadias, the orifice is near the root, and on the dorsum of the penis, which organ is slightly developed, and most often cleft throughout its entire length.

Hypospadias is not a disqualification for military service, whenever the opening is situated at the extremity of the penis, beneath the gland, and the urine can be ejected to some distance; when, in fact, the opening is large enough to permit the escape of a stream of urine of normal size, which may be ascertained by a bougie,

or causing the subject to pass water before the surgeon. In all other cases, there is a total disqualification for the military service. A person, laboring under such infirmities, cannot avoid soiling his garments during every passage of water, and these soon become offensive, to an intolerable degree, to all about him; while the humidity itself is a source of constant danger to his health. The same rule necessarily applies to urinary fistulas, with this difference, that when they occur in soldiers, an operation should first be resorted to, wherever the case justifies it, before granting a discharge.

Foreign Bodies.

§ 347. Foreign bodies are occasionally introduced into the urethra either accidentally or through design; these bodies, not admitting of being extracted without a surgical operation, afford a cause for rejection. Calculi, lodging themselves there, would produce a similar disqualification, not only as being foreign bodies, but because they would create fears of the presence of other calculi in the kidneys or bladder. On the other hand, they would afford a cause for discharge, only in exceptional cases.

Stricture.

§ 348. Strictures of the urethra, recognizable by the bougie, or by causing the subject to pass water in one's presence (the stream of urine is often in such cases forked or twisted) is a disease of difficult cure, and productive of consequences incompatible with the discharge of a soldier's duties. Nevertheless, whenever it occurs in a soldier, no discharge should be granted until all curative means have failed.

Urethritis.

§ 349. Inflammation of the urethra, whether acute or chronic, never is a cause for rejection or discharge.

Diseases of the Prostate.

§ 350. Diseases of the prostate are very rare among young men. This gland may be the seat of hypertrophy, either congenital or acquired, of various mechanical lesions, or of calculous disease. The decision to be arrived at in each case must be determined by the nature of the lesions, which may be either trifling and without importance, or seriously endanger the functions of the organ. Young men often believe themselves the subjects of serious diseases of the prostate, when, in fact, none exist. In such cases, they should always be subjected to a manual examination by the rectum.

SECTION XXXIX.**DISEASES OF THE GENITAL ORGANS.**

§ 351. The frequency and variety of the diseases of the genital organs in man, require the closest attention, and a certain amount of practical experience, when viewed in the light of causes for rejection or discharge. Some of these diseases exhibit forms or degrees at times incompatible with the discharge of a soldier's duties.

Traumatic Lesions.

§ 352. Accidental mutilations of the genital organs,

occasioning complete or almost entire loss of these parts, whether arising from criminal acts, particularly with cutting instruments, or from gunshot wounds, require both the rejection and the discharge of a party. In fact, the loss of these parts becomes at once a cause of physical infirmity (with obstacle to passing water or complication of fistulas) and a cause of moral infirmity, through the depressive influences which belong to this infirmity. But the same is not the case in partial lesions, or such as are capable of being cured.

DISEASES OF THE PENIS.

Phymosis and Paraphymosis.

§ 353. Phymosis and paraphymosis, existing without complication, are not a cause either for rejection or discharge, since they can always be readily cured. The simple operation for phymosis has sometimes sufficed to remove symptoms which were attributed to the presence of vesical calculus.

Atrophy.

§ 354. Atrophy of the penis, however marked, is not a cause for rejection, unless accompanied by simultaneous atrophy of the testicles. But extensive hypertrophy of this organ, to the degree of constituting elephantiasis, would be a disqualification in itself, as well on account of its tendency to invade the scrotum, as of interfering with marching.

Loss of the Penis.

§ 355. Total, or almost entire, loss of the penis, whether resulting from voluntary mutilation, accidental

wounding, or surgical amputation, requires the rejection or discharge of a party. The same rule obtains in cases of crushing of the penis, followed by deformity, rupture of the corpora cavernosa, laceration, fistula, and stricture of the urethra.

Various Affections.

§ 356. As to ulcers, chancres, and syphilitic warts, they do not, in the majority of cases, require any mention here; but it will be different if the penis has been partly destroyed by a phagedenic ulceration, the cure of which would not restore the organ to its natural shape.

DISEASES OF THE SCROTUM.

Wounds.—Lacerations.

§ 357. Wounds or lacerations sufficiently extensive to expose the testicles, may afford causes for rejection. It is well to bear in mind, however, that cicatrization occurs nearly always without adhesions.

Contusions.—Hæmatocele.

§ 358. Violent contusions, or contused wounds, often give rise to hæmatocele by infiltration or extravasation. In the former case (infiltration), the blood is ordinarily absorbed with facility, and rejection is not called for any more than by other forms of ecchymosis, provided there are no complications. This state counterfeits gangrene in a gross way, but the least attention will expose the fallacy. In the latter case (extravasation into the tunica vaginalis), the manifestations bear a strong resemblance to those of hydrocele, and demand a like decision.

Cutaneous Affections.

§ 359. The scrotum may be the seat of various cutaneous affections which spread to the neighboring parts, the internal and superior surface of the thighs, the perineum, and the margin of the anus. These diseases, which are often of difficult cure, and ordinarily provoke an intolerable itching, are aggravated by the friction occasioned by marching, and by the contact of woollen clothing. They constitute a cause for rejection and discharge, under all the conditions mentioned in the chapter devoted to the consideration of these diseases. Care should be taken, however, not to confound them with simple chafing, and other trifling diseases, which do not deserve special mention in this connection.

Swellings and Abscesses.

§ 360. Swellings and abscesses never are a cause for rejection, unless the latter are symptomatic of, or associated with, scrofula.

Urinary Abscesses.

§ 361. Urinary abscesses of the scrotum, are of sufficient importance to constitute a disqualification for the military service.

Emphysema.

§ 362. Air never accumulates in the scrotum. Whenever, therefore, parties present themselves with this region tumefied, light, when compared with its volume—distended, elastic, and resonant under percussio, there is certainly fraud, and the emphysema has been artificially produced.

Œdema.

§ 363. Œdema of the scrotum acquires its importance from the general bodily condition of its subject, and the cause which has originated it. It is never uncomplicated, and this circumstance enables us always to discover the deception, whenever any person has caused water to be injected, through a small opening, into the cellular tissue of the scrotum.

Varicocele.

§ 364. Varicocele, which is a tumor formed by the distension of the spermatic veins, occurring between the external orifice of the inguinal canal and the epididymis, is not a cause for rejection, unless it occasions, by its size, a marked impediment to marching, or the performance of other movements. Nor should a discharge be granted therefor, until curative treatment has proved unavailing. Even then a soldier, if unable to march, may be made useful in some less active capacity.*

* The differential diagnosis of varicocele, and inguinal hernia, is easily established by noticing the following distinctions in their symptoms. In *Hernia*, the tumor is uniformly round, soft, and compressible, and often emits a gurgling sound on pressure; when reduced, it returns on removal of the support and resumption of the upright position, or coughing. In *Varicocele*, the tumor is pyramidal in form, its base resting upon the testis, and its apex ascending into the external ring; it feels like a knot of earthworms (eirsocle), and when reduced, and the patient resumes the upright position, it returns, despite pressure upon the abdominal ring, owing to the circulation continuing in the spermatic veins. This was the test proposed by Sir Astley Cooper. In cases of hernia, the extremity of the finger should be pushed as far as possible into the external abdominal ring, by thrusting the skin of the scrotum before it. Under which circumstances the contact, or impulse of the descending hernia can almost invariably be recognized, when it exists, if the suspected party be made to cough, when in the upright position.

Hydrocele.

§ 365. Hydrocele of the spermatic cord, and that of the tunica vaginalis, are causes for rejection; but not for discharge, inasmuch as its radical cure can be obtained by surgical treatment. It is impossible, in whatever way attempted, to feign, with any degree of probable success, either of these diseases.

Encysted Tumors.—Fistulas.—Calculi.

§ 366. Encysted tumors, of any notable size, by reason of their tendency to increase; fistulas communicating with the tunica vaginalis, or the testicle; calculous concretions of the scrotum, which are rare, are causes for rejection, but not generally for discharge.

Elephantiasis.

§ 367. Hypertrophy of the scrotum and of the subjacent cellular tissue, known as elephantiasis, is extremely rare. But whenever present, would always constitute a cause for rejection.

DISEASES OF THE TESTICLES.

§ 368. The influence exercised by the functional activity of the testicles upon the constitution, the physical and moral courage of individuals, requires that the integrity of these organs should be unimpaired. Hence their loss, atrophy, or the degeneration of either of them, constitutes an absolute incapacity for the military service.

Anorchidia.—Ectopia.

§ 369. Absence of the testicles, or anorchidia, is only apparent; it is often only ectopia, or malposition. Sometimes the testicles have not descended; sometimes,

though rarely, they are in the perineum, but more frequently they are lodged in the inguinal canal. Ectopia may be slight, and the testicles capable of being pushed down and maintained there; in which case no cause for rejection would exist. But if they were strongly compressed in the ring, it would be well to reject the party, by reason of the pain they occasion, their tendency to become atrophied, or the hernias to which they often give rise. It is safe to believe in the retention of the testicles in the abdomen, and consequently in the capacity of a party, whenever he exhibits in general, all the other signs of virility, and no credible testimony, nor external signs afford any presumption that these organs have been removed by a surgical operation, or destroyed by wounds.

Atrophy and Loss.

§ 370. Atrophy of the testicles is more often acquired than congenital. It frequently results from premature excesses or mechanical injuries. This condition would not afford any cause for rejection, unless existing to a great degree. Atrophy of one of these organs, the other being healthy and well developed, is not a disqualification for military service; but where the remaining one is attacked, and in an incipient state of atrophy, the party should be rejected.

Orchitis.

§ 371. Inflammations of the testicle may require the rejection of a party, whenever they are the result of considerable violence; and if the disease has become chronic it may also require that a party be discharged. The same rule will apply to syphilitic orchitis, which may

be complicated with various consequences, and evince a tendency to degeneration. Gonorrheal epididymitis, which must not be confounded with the preceding, is not a serious disease, and not likely to lead to any consequences, rendering a party unfit for the duties of a soldier.

Fistulas.

§ 372. The like rule will apply to non-adherent fistulas of the testicles.

Enchondroma.

§ 373. Enchondroma, or cartilaginous degeneration of the testicle, and the other forms of degeneration, of which these organs are frequently the seat, are manifest causes for rejection, and most frequently for discharge.

Diseases of the Spermatic Cord.

§ 374. Chronic inflammation of the spermatic cord, independent of, or complicated with, disease of the testicle, and occasioning either infiltration, or more serious disorders, is a cause for rejection, and sometimes, even for a discharge. The same rule will apply to hydrocele and degeneration, arising from those of the testicle.

Spermatorrhœa.

§ 375. Spermatorrhœa, even if its existence, in an aggravated form, could be demonstrated, should not be a cause for rejection, unless the general health were manifestly broken down, and it were accompanied by evidences of organic disease.

SECTION XL.

DISEASES OF THE LIMBS.

§ 376. Soundness of the limbs, in all their parts, is assuredly one of the most important of all prerequisite conditions for the duties of a soldier. Their shape should exhibit no extremes, either of size, or want of development—the cutaneous functions should be performed with regularity—the perspiration be moderate—the sensibility of touch be normally developed. It is also indispensable that the bony structure should furnish a sufficient fulcrum of resistance to the action of the muscles, and the play of the articulations. Some diseases of the limbs might be concealed and overlooked, if the surgeon neglected to examine in detail the play of all the articulations of the arms, hands, and, in particular, the fingers; and if care were not taken to make the recruit walk.

Anomalies.

§ 377. It is indispensable that both the upper and lower limbs should be mutually alike; every anomaly of organization, therefore, in their number, shape, and relations, is an absolute disqualification for the military service.

Inequality of Limbs.

§ 378. Congenital inequality of the limbs, carried to a marked degree, is very rare. It may be limited to the upper or lower limbs, or extend to both. For example, all the parts of one side have been seen longer, and lar-

ger, than those of the other. From such an anomaly there results incapacity for the duties of a soldier; on the one hand, because the manual of arms could not be performed with regularity, by limbs of unequal length and strength; and on the other, because there necessarily results lameness in the lower limbs, with curvature of the spine, and all the inconveniences attendant upon it.

Incurvation of Limbs.

§ 379. Incurvation of the arms is not rare—the forearm instead of continuing, in its articulation with the humerus, the almost straight line which the whole arm should make, forms a larger angle, opening outwardly. This deformity may render it impossible to perform, with regularity and precision, certain motions in the handling of arms. The same is the case with bow-legs, which are a disqualification, because they prevent junction of the heels, and occasion an impediment and an irregularity in walking, which extends almost to lameness when the deformity is restricted to one leg. This deformity is, in the majority of cases, associated with scrofula.

Atrophy of the Limbs.

§ 380. Whether atrophy be congenital or acquired, whether it involve all the limbs or be confined to one, the relative weakness which it occasions necessarily constitutes an absolute disqualification for the military service.

Contractions.

§ 381. Contraction, or rigidity, and shortening of certain muscles, with diminution or loss of their normal ex-

tensibility, occasions, sometimes flexion, and more rarely permanent extension, of a portion of a limb, and always constitutes an absolute disqualification for the military service. Contraction of limbs is often feigned—a fact which may be suspected whenever it is declared to be of long standing, and yet the limb is not emaciated. There are persons who, for a long while, keep the forearm and leg continually bent, and thus succeed in interrupting the nutrition of their limbs. Others habituate themselves to wearing a high heel, in order to compel flexion of the knee while walking; others, as is most commonly the case, keep the thumb and index finger of one hand in a state of absolute repose, by flexion, or compress the hand with a band, in order to diminish the size of the fingers and to crook them, allowing perspiration and dirt to accumulate beneath them for the purpose of rendering the curvature more probable, and sometimes even burn themselves, in the direction of the tendons of the flexor muscles, to make the retraction appear more natural. All these frauds will fail in the presence of a surgeon enlightened by experience, since the phenomena of nature can never be perfectly imitated by art. In each of the foregoing cases suspicion should be awakened not, properly speaking, when the muscles feel hard and tense alone, as has been said; but when their belly presents, along with hardness, that swelling which accompanies every contraction, and when too there may be felt, within their thickness, those slight jerkings which betray the incessant repetition of contractile efforts on the part of the muscular fasciculi, resisting action imparted to the limb in a different direction. In order to expose the cheat, or to cause suspension of its effects, the simulator must be met by

artifice: his attention must be strongly distracted, while at the same time an effort is made to surprise him, and to suddenly overpower resistance. At other times belief must be pretended in his assertions, and he must be led to acts in contradiction with them. Fraud may be discovered by making the suspected man stand on one foot, upon a post slightly elevated, and compelling him to balance himself upon the sound leg; fatigue will soon oblige him to extend the limb artificially contracted. Finally, a more direct and potent expedient offers itself, which consists in applying upon the limb a tight, and well-rolled bandage made of new linen, and afterwards wetting it, in order to increase its compressive power. The limbs being no longer able to contract beneath this uniform impediment, soon cease to resist motion. When the party is in hospital, it will suffice to wait until he is asleep in order to straighten the limb and to expose his deception. This last method of verification is applicable to cases of feigned ankylosis. The use of an anæsthetic will, in general, speedily determine the question.

Supernumerary Limbs.

§ 382. This anomaly is of rare occurrence, so far as it relates to a whole limb. It is sometimes observed, however, with regard to the lower extremities.

It is more frequent when partial and limited, for example, to fingers and toes. Thus, certain persons are born with supernumerary fingers or toes; these may be either rudimentary or possess the complete organization of true fingers or toes. Both these deformities constitute a disqualification for the military service.

Mechanical Lesions.

§ 383. The various mechanical lesions which affect the limbs either in their continuity or their contiguity, deserve serious attention, as well on account of the weakness to which they give rise, as of the deformity which they may occasion. The decision to be given in each case will rest necessarily upon the importance, extent, seat, and nature of parts involved, as also upon the consequences produced. A superficial and slight wound is trifling; a deep wound, however slight in extent, may have occasioned persistent troubles. Wounds of the joints are always serious.

Exsections and Amputations.

§ 384. Exsections applied to the bones of the limbs, whether in their continuity or in their contiguity, are always causes for rejection and often for discharge. The same rule, for a still stronger reason, will apply to loss of limbs by amputation.

Fractures.

§ 385. Fractures of the limbs, simple, recent, or united by a small non-prominent callus, without deformity, are not a cause for rejection. But the same will not be the case when the fracture is of long standing, badly united, or has occasioned a false articulation, or again, when union has taken place with an exuberant callus, angular and voluminous, with or without shortening of the limb. All such cases afford causes for rejection or discharge.

Sprains and Luxations.

§ 386. Recent sprains are generally recovered from without serious consequences, but the possibility of con-

secutive disability, should lead the examining surgeon to bestow the greatest care upon the examination of those individual cases, concerning which his decision is required.

Old sprains, when accompanied by swelling, pain, and difficulty in walking, are always a cause for rejection. If the sprain is of an upper limb, its consequences are less serious, and it often justifies a favorable prognosis.

Congenital luxation, particularly of the femur, justifies the rejection of a party; the same rule does not obtain, however, when it is accidental, and properly reduced, unless it has given rise to injurious consequences, such as partial paralysis, with atrophy of the limb, which are sufficient causes of disqualification.

Old and properly reduced luxations do not justify rejection, unless they have been followed by serious consequences which interfere with the play of the articulation.

Badly reduced luxations, together with unreduced luxations, are always a disqualification for military service.

Arthritis and Hydrarthrosis.

§ 387. Arthritis, and even hydrarthrosis, when simple and recent, justify neither the rejection nor the discharge of a party, whatever may have been their origin, whether accidental or gonorrhœal, with the exception, however, of inflammation of the shoulder or hip joint, which are often serious, and demand all the attention of the surgeon. These diseases, when chronic, are, on the contrary, always causes for rejection, and sometimes for discharge. The same rule, for still stronger reasons, will apply to well-marked white swellings of the joints, complicated or not with sinuses or ulcerations.

Varices.

§ 388. Varices which are fluctuating, knotty, and livid tumors, formed by the permanent distension and elongation of the veins, may be considered as exclusively confined to the lower limbs, so rarely are they encountered in the arms. Their existence in young men, whenever they cannot be explained by any local cause or professional influence, may be referred to some obstacle to the flow of the blood, either from compression of some venous trunk by a tumor, or by some lesion in the central organs of circulation or respiration. It is therefore under this aspect that investigations should be made, and whenever the presence of varices is added to other signs, even obscure, of any of the foregoing diseases, the decision should lean towards the side of rejection. Except in such instances, no attention need be paid to scattered and superficial varices which are without importance. But when they are deep seated, and detached, in knotty clusters, extending to the thigh, and even to the groin, they must be considered a disqualification for the military service. Sometimes swelling of a lower limb is noticed, which springs from no other cause than deep-seated varices often associated with serious internal disease. Such cases justify rejection.

Among soldiers, it must not be forgotten that varices which might be troublesome when men are forced to make long and rapid marches, do not prevent them from serving in some sedentary capacity.

Abscess.

§ 389. Acute abscess occurring in the limbs, if large, diffused, and situated beneath the deep fasciæ, may occasion copious suppuration and extensive scars, and

must be considered a cause for rejection. But if only superficial, and of slight extent, it would not be so.

Chronic and indurated abscess is always serious enough to constitute a disqualification.

Whitlow of the fingers is unimportant when superficial; but if deep seated, it is well to bear in mind the possible consequences which it may occasion, such as multiple and extensive incisions, deformity, stiffness, and even loss of the phalanges. In such cases rejection must follow.

Œdema of the Limbs.

§ 390. Œdema of the limbs, which is often suggestive of organic disease of the heart and kidney, may be artificially produced by the application of ligatures impeding circulation. The possibility of such things should always awaken the attention of surgeons.

Elephantiasis of the limbs when present, always constitutes a cause for rejection.

Neuralgia.—Rheumatism.

§ 391. Chronic neuralgias, like sciatica and chronic rheumatic pains, which occasion a real impediment to the discharge of a soldier's duties, are too easily feigned not to be often alleged, although young men are much less subject to them than persons of more mature age. When the pains are very intense, and have lasted for some time, they always produce an emaciation, and sensible weakness in the strength of the limbs, whose muscles, diminished in volume, become flaccid, and whose form sometimes undergoes alteration. Where no apparent symptom reveals the presence of these affections, the surgeon may draw some conclusions from the pro-

fession of the party and his local habits. It is well known that country people are more subject to these diseases than city people, and that there are modes of living where they are most easily contracted. In uniting these various data, and in combining and comparing them, the surgeon will nearly always be able to distinguish the real from the feigned disease. Whenever this diagnosis cannot be established, the Board of Enrolment has no other resource than proofs derived from public notoriety.

Among soldiers a powerful auxiliary will be found in those active medicines which these diseases, when real require, and which, in cases of imposture, finally succeed in wearying, or intimidating malingerers. Yet experience forces us to admit, that there are men whom the longest and most severe treatment fails to overpower. It is therefore justifiable to incline towards severity, rather than towards leniency, for fear of the contagiousness of example; but this severity should immediately cease, at the first intimation of a real impairment of health.

Gout.

§ 392. Gout is extremely rare in youth, being generally found only in old age. It is also of infrequent occurrence among soldiers and non-commissioned officers, whatever may be their age. It would, if present, constitute a disqualification for the military service.

Professional Deformity of the Hands.

§ 393. Certain manual avocations impress upon the hands modifications of more or less extent, amounting sometimes even to real deformities. It is unusual, how-

ever, to find them existing to such a degree as to require the rejection of a party; for it must not be forgotten that a change of occupation most generally suffices to diminish sensibly these alterations, or even to obliterate them entirely. The surgeon need not spend much time upon them, unless they are very strongly marked, since the manual of arms will of itself tend to restore the hand to its normal condition.

MUTILATIONS OF THE FINGERS AND TOES.

§ 394. Mutilations of the fingers and toes are a disqualification for military service, whenever they consist in any of the following lesions:

Hands.

1st. Total loss of either thumb or one of its phalanges.

2d. Total loss of the index finger of the right hand or of one of its phalanges. Total loss of the index finger of the left hand or of two of its phalanges.

3d. Total loss of any two fingers or coexisting loss of two phalanges of two fingers.

4th. Coexisting loss of one phalanx of the three last fingers.

Feet.

§ 395. 1st. Total loss of either great toe or of one of its phalanges.

2d. Total loss of two of the lesser toes.

3d. Coexisting loss of one phalanx of all the small toes.

It is particularly in relation to these mutilations that the serious question of how they occurred arises. For it is doubtless true that, both before and after admission

into the army, parties do voluntarily mutilate themselves, either with cutting instruments or fire-arms. The extreme difficulty under which an examining surgeon labors, in such cases, can readily be conceived, as also how great must be the certainty of his conviction before making an allegation of fraud against any one.

The examination, made with the greatest possible care, should bear upon the antecedents of the party and all the circumstances of the accident ; but, generally speaking, the question can only be solved when the mutilation is recent, and even then often gives rise to many doubts.

Permanent Flexion, or Contraction of the Fingers.

§ 396. Permanent flexion of the fingers may be either congenital or accidental, and arise from very different causes, involving the integuments, the cellular and fibrous tissues, the muscles and tendons, the nerves, and the phalanges, in their continuity or contiguity. Attention should be directed to the skin, which may be the seat of a retraction caused by cicatrices ; to the muscles, and fibrous tissues, which may be shortened by loss of substance ; to the nerves, whose lesion may have caused local paralysis ; or to articular and bony tissues. Permanent flexion of the fingers, unless existing in a slight degree, is a disqualification for the duties of a soldier. It may be looked upon as feigned, whenever we fail to find a reason for it in the causes, or tissues, above enumerated.

Permanent Extension of the Fingers.

§ 397. The same considerations apply to well marked permanent extension of the fingers, which may affect one or more of them.

DEFORMITIES OF THE FEET.

Club-Foot.

§ 398. The extremities of the limbs present deformities known, when belonging to the feet (where they are more common than to the hands) under the designation of club-feet. Whatever may be their variety, and appreciable degree, whether *equinus*, *talus*, *varus*, or *valgus*, they constitute an evident disqualification for the military service.

A mild form of club-foot may be simulated by a false position of the foot, being either voluntary, and momentary, or permanent by reason of a faulty mode of walking. It requires no special mention.

Flat Feet.

§ 399. The bony framework of the feet is, in most persons, so constituted as to present on its inner side a hollow, whose concavity faces the ground, while its convexity forms the instep; whence it follows that, standing or walking, that portion of the sole of the foot which forms the summit of this hollow does not touch the ground. The generic term *flat feet*, is given to those who do not possess this conformation. A very important distinction must, however, be made in this connection; for at times there may be simple flatness, and again there may be flatness with deviation of the foot.* Feet that are simply flat, do not prevent marching, and are not a cause

* The deviation alluded to here consists in a twisting of the foot on its own axis, so as to bring its inner border in contact with the ground, while its outer border fails to receive its due proportion of the weight of the body.

for rejection ; but flat feet with deviation, are, on the contrary, always a disqualification. If we limit ourselves, however, to an examination of the sole of the foot, and there discover no hollow, and if, finding its whole surface uniformly callous, and soiled, from contact with the ground, we reject the party, we at times run the risk of committing a great error. This false appreciation is founded upon the opinion that the difficulty of walking, under such circumstances, arises from compression of the nerves, and soft parts of those regions. Experience contradicts this assertion. Many countrymen, and more particularly mountaineers, have the soles of the feet flat, without hollow, and touching the ground through their whole extent, and yet these men are, in general, good walkers. The flat foot, with deviation, which constitutes a disqualification for the military service, consists not only in an absence of the hollow of the foot, and a flatness of its dorsum, but also in an unnatural inclination of it. In such cases the internal malleolus descends low down, and is prominent ; the astragalus is inclined inwardly, and the axis of the leg does not fall directly upon the centre of the foot, whence it follows that the inner side of either ankle is prominent, and the corresponding malleoli exposed, to interfere painfully in walking, or to be bruised by contact with a rough soil. The lateral ligaments of this region are stretched, weakened, and, during protracted marches, this part being strained, suffers and becomes inflamed and swollen. None of these troubles arise when, although the surface of the feet be flat, the leg and the foot are in their natural relations. The shape of the foot in these cases often arises from the fact that the hollow is filled by the muscles of the plantar surface, which

have acquired unusual size through habitual exercise. This circumstance, far from indicating any impediment to marching, proves, on the contrary, the extent of the locomotive power.

Hollow Feet.

* § 400. An opposite deformity to this, and which might be called *hollow feet*, is sometimes met with. This is characterized by a more or less extensive hollowing of the foot, with a corresponding arching of its instep. This last feature is not witnessed when the hollowing arises from traumatic lesion, with loss of substance. This deformity affords a cause for rejection, whenever it is sufficiently marked to cause an impediment in walking.

Faulty Direction of the Toes.—Sub-Luxation.

§ 401. The natural direction of the toes may be altered in different ways, and by different causes. One of them may have changed its normal place and direction, and ascended laterally, in such a way as to cross and override the one immediately adjoining; and as soon as this deviation becomes chronic, the articular surfaces themselves alter their direction, and a cure becomes next to impossible. This overriding of one or more toes, when it exists to an extreme degree, has become permanent, and yields with difficulty to mechanical pressure, interferes more or less with walking, and may, on this account, require the rejection of a party.

Some persons produce it purposely. The cheat may be discovered by noticing whether, to the cushion of the displaced toe, a corresponding hollow on the other affords a lodging place.

Walking on the Nail.

§ 402. In other cases, the first phalanx of one of the toes, and it is commonly the *third*, turns up by degrees, in such a way, as to form, with the metatarsus which sustains it, an obtuse angle approximating more or less to a right one, while at the same time the second and third toes incline themselves in an increasing flexion, so that the extremity of the toe pointing downwards rests upon the ground, when the person stands or walks. The toe is thus compressed between the upper and the sole of the shoe. This pressure causes more or less pain, the skin becomes inflamed, red, and often ulcerates on the prominent side, and walking becomes painful. Persons laboring under this infirmity, when strongly marked, cannot endure a long march, particularly when the third phalanx bends upon the second to such an extent that the toe, instead of resting upon its cushioned end (hammer-toe), rests upon the nail itself, which is then called "walking on the nail." This latter condition is an absolute disqualification. When the cushioned extremity of the toe rests upon the ground, the party can still walk, and no cause for rejection exists.

Web Fingers and Toes.

§ 403. Sometimes the fingers and toes are united by a prolongation of the skin, extending for a variable distance from their root toward their extremities, and which is designated a web. When this abnormal membrane is found between all the fingers of one hand, although it should not extend beyond the first or proximal phalangeal articulation, the party must be rejected. Two fingers alone united throughout their extent would justify a similar disposition of him, whereas, if united through a

space of about an inch, disqualification would only arise if the web existed between the thumb and forefinger, or between this last and the middle one. As for the toes, with the exception of the great one, they must all be united, and throughout their whole extent in order to afford a cause for rejection. The great toe must always be free throughout its whole extent.

Subungual Exostosis.

§ 404. Subungual exostosis of the great toe, although not a serious affection, is a cause for rejection, because of the painful operation which it requires. But it would afford no cause for a discharge, unless in very exceptional cases.

Bunion.

§ 405. The tumor affecting the internal aspect of the metatarso-phalangeal articulation of the great toe, varies in importance. When it does not extend beyond the epidermis, or true skin, no attention need be paid to it; but if the fibrous tissues, the periosteum, and the bony tissues are themselves altered, which is most frequently the case, the party must be rejected. A discharge, in like manner, is called for, whenever this tumor has successfully resisted all curative treatment.

Corns.

§ 406. Corns on the feet are in general a trifling affection. Nevertheless, they may have acquired a sufficient size to interfere very sensibly with walking. Excision is only an imperfect remedy, and under very peculiar circumstances, therefore, they might afford a cause for rejection. But a discharge could only be granted under extraordinary circumstances.

Perforating Ulcer of the Foot.

§ 407. Perforating ulcer of the foot, a disease but recently known, attacks chiefly the sole of the foot, the surface of the metatarso-phalangeal articulations, the cushion of the toes, and the heels. This affection manifests itself in a thickening of the epidermis which covers an ulcerated surface, whence exudes a small quantity of viscid, colorless, and fetid matter. These ulcerations heal with difficulty and tend to increase in depth. They constitute an absolute disqualification.

Fetid Perspiration from the Hands and Feet.

§ 408. It is particularly at the points of union between the trunk and the limbs, and where the latter are in permanent contact with it, that cutaneous exhalation occurs with the most constancy and abundance. These are the chief sources of the smell which it emits. Now this odor may habitually be of so fetid a character, as to constitute a good cause for the rejection of a party. But it can be readily conceived that much caution is needed in forming a decision, for there are individuals in whom this serious inconvenience only manifests itself during exercise. They can therefore readily conceal it, or even if they disclose it, it is difficult to establish its reality. On the other hand, it is often feigned, notwithstanding the fact that when real, this odor is so entirely *sui generis*, as to be readily distinguished. It should not then be admitted as a cause for rejection until authenticated by reliable testimony, or unless it persistently showed itself after subjecting the individual to repeated washings with soap and water. Nor should it be forgotten, either, that it sometimes depends upon the avocation followed, and that consequently it may be removed by change of cir-

cumstances, such, for example, as entrance upon a soldier's life and an observance of those rules of cleanliness, to which military men are subjected.

Diseases of the Nails.

§ 409. The nails, particularly of the feet, may be the seat of a form of hypertrophy, rendering them similar to horny growths. This condition would not constitute a disqualification for the military service, unless it had acquired enormous proportions, and given evidence of being remediless.

The same rule will apply to extensive curvature of the nails, which often accompanies hypertrophy.

In-growing Nail.

§ 410. The great toe is sometimes the seat of a disease known as in-growing nail. In this state, the nail either grows in an abnormal direction, or else encroached upon by the soft parts around it, which have themselves been compressed by too tight a shoe, it burrows into the flesh beneath its lateral edge. Irritation of the parts ensues; ulcers are formed which occasion the development of soft, sometimes fungous flesh; and lancinating pains, always aggravated by walking, accompany the disorder.

In-growing nail, being susceptible of cure, does not justify rejection, unless it should exhibit an exceptional degree of severity, and be complicated with a fungous state of the surrounding flesh. It can only rarely afford a cause for discharge.

Syphilitic Affection of the Nail.

§ 411. Syphilitic ulcer of the nail, which may counterfeit in-growing nail, does not, of necessity, constitute a disqualification for the military service.

DISEASES OF THE BURSÆ MUCOSÆ AND SYNOVIAL MEMBRANES.

Hygroma.—Cysts.

§ 412. Hygroma, or dropsy of the subcutaneous bursæ mucosæ, and more particularly of that of the knee, may be sufficiently voluminous to impede walking, and thus afford a cause for rejection. If its development is only slight, it merits no attention.

The same rule applies to synovial tumors, and to the *cysts* formed in the wrist or calf of the leg. Small synovial cysts, or ganglia, such as are frequently met with on the extensor tendons of the hand, are not a disqualification for the military service, unless exceedingly voluminous.

Foreign Bodies in the Articulations.

§ 413. There are often formed within the capsular ligament of joints, hard, round, or flat bodies, mostly cartilaginous, which give rise to pain and impede the freedom of motion. These non-adherent bodies may be formed in any of the movable articulations; but it is in the knee that they are most often found, and where they occasion consequences which are a disqualification for the duties of a soldier.

Lameness.

§ 414. Lameness may be the consequence of most of the foregoing lesions, when they are situated in the lower limbs. Hence, it may arise from congenital deformity, from obliquity of one of the sides of the pelvis, from pain, or from swelling of the limbs. Whatever its cause, unless it be an acute disease, which is known not

to constitute a disqualification for the military service, it should afford a cause for rejection or discharge.

But this infirmity is often feigned, and the fraud then demands the closest attention on the part of the surgeon. It is only by a correct measurement, that we can assure ourselves of the inequality in length of the lower limbs, and consequently of the reality of the lameness ascribed to this cause.

For this purpose the subject should be laid horizontally on his back, and a comparative measurement, on both sides, be made of the space between the most prominent point of the crista ilii and the external malleolus, in passing the tape directly in front of the trochanter major.

Conclusions.

§ 415. The foregoing instructions can hardly be considered in the light of a code of absolute prescriptions. Yet the pathological indications which they describe, when judiciously combined with the results of individual examination, will generally be found sufficient to guide examining surgeons, as also to enlighten Boards of Enrolment in confirming the decisions of their medical advisers.

It is also necessary in this connection to establish, as a leading principle, the propriety of the surgeon not resting satisfied with convincing himself alone of the existence of the fact to which his attention is called, but seeking also to impart a like conviction to his colleagues in the Board. It is well, therefore, whenever possible, to sustain his opinion by a sensible, material, and evident demonstration, instead of limiting himself to a simple declaration of it. But in following this course one

danger must be avoided, and that is the tendency to be captivated by the ease of explaining external affections, to the neglect of internal diseases, which are nearly always of more serious character. Boards of Enrolment are in general disposed to reject parties for visible and palpable infirmities, although often of a trifling character, while they are much more strictly disposed towards visceral lesions which they cannot perceive. It becomes the duty of the examining surgeon, under such circumstances, to unfold the great importance of these structural alterations, and to explain the consequences to which they may give rise.

In conducting the personal examination of a party, kindness, forbearance, and patience of attention to his statements should be exhibited; he should be saved from indiscreet curiosity, and proper precautions be observed to spare the becoming sensitiveness of families, on the score of hereditary diseases.

In conclusion, examining surgeons should remember the double duty they are called upon to discharge, in securing healthy recruits for the army, and in protecting the interests of the infirm. Whenever, therefore, they entertain any serious doubt of the physical capacity of an individual, they must act conscientiously, and as the law directs, by advising his rejection.

APPENDIX.

A P P E N D I X .

[OFFICIAL.]

PROVOST-MARSHAL GENERAL'S BUREAU.

INSTRUCTIONS FOR THE PHYSICAL EXAMINATION OF DRAFTED MEN.

I. THE duty of inspecting drafted men, and of determining whether they are fit or unfit for the military service of the country, requires the utmost impartiality, skill, and circumspection on the part of the Examining Surgeon and Board of Enrolment, for upon the manner in which this duty is performed, will depend in a very great degree the efficiency of the Army.

II. In the examination of drafted men, the Examining Surgeons will bear in mind, that the object of the Government, is to secure the services of men who are effective, able-bodied, sober, and free from disqualifying diseases.

III. The Examining Surgeons will also remember that the object of the drafted men in claiming exemption may be to escape from service by pretended, simulated, or factitious diseases, or by exaggerating or aggravating those that really exist, and that the design of substitutes frequently is, to conceal disqualifying infirmities.

IV. The examination of a drafted man by the Examining Surgeon is to be conducted in the day-time, in the presence

of the Board of Enrolment, and in a room well lighted, and sufficiently large for the drafted man to walk about and exercise his limbs, which he must be required to do briskly.

V. The man is to be examined stripped.

The principal points to be ascertained are as follows :

1. Whether his limbs are well formed and sufficiently muscular ; whether they are either ulcerated or extensively cicatrized ; whether he has free and perfect motion of all his joints, and whether there are no varicose veins, tumors, wounds, fractures, dislocations, or sprains that would impede his marching or prevent continuous muscular exertion.

2. Whether the thumbs and fingers are complete in number, are well formed, and whether their motions are unimpaired.

3. Whether the feet are sufficiently arched to prevent the tuberosity of the scaphoid bone from touching the ground ; whether the toes are complete in number, do not overlap, are not joined together, and whether the great toes are free from bunions.

4. Whether he has any inveterate and extensive disease of the skin.

5. Whether he is sufficiently intelligent ; is not subject to convulsions, and whether he has received any contusion, or wound of the head that may impair his faculties.

6. Whether his hearing, vision, and speech, are good, and whether the eye and its appendages are free from disqualifying diseases.

7. Whether he has a sufficient number of teeth in good condition to masticate his food properly, and to tear his cartridge quickly and with ease. The cartridge is torn with the incisor, canine, or bicuspid teeth.

Whether his chest is ample and well formed, in due proportion to his height and with power of full expansion.

9. Whether there is any structural or serious functional disease of the heart.

10. Whether the abdomen is well formed, and not too pro-

tuberant ; whether neither the liver or spleen are considerably enlarged ; and whether the rectum and anus are free from disqualifying diseases.

11. Whether the spermatic cords and testes are free from diseases which would impair his efficiency, whether the testes are within the scrotum, and whether he has any rupture.

12. Whether there is any organic disease of the kidneys or bladder, or permanent stricture of the urethra.

13. Whether his physical development is good, and constitution neither naturally feeble, nor impaired by disease, habitual intemperance, nor solitary vice ; whether he is free from phthisis, scrofula, and constitutional syphilis ; and whether he is epileptic, imbecile, or insane.

DISEASES OR INFIRMITIES, WHICH DISQUALIFY FOR MILITARY SERVICE.

1. *Manifest imbecility or insanity.*

2. *Epilepsy.* For this disability, the statement of the drafted man is insufficient, and the fact must be established by the duly attested affidavit of a physician of good standing ; who has attended him in a convulsion.

3. *Paralysis, general, or of one limb, or chorea*—their existence to be adequately determined.

4. *Acute or organic disease of the brain or spinal cord ; of the heart or lungs ; of the stomach or intestines ; of the liver or spleen ; of the kidneys or bladder*—sufficient to have impaired the general health, or so well marked as to leave no reasonable doubt of the man's incapacity for military service.

5. *Confirmed consumption ; cancer ; aneurism of the large arteries.*

6. *Inveterate and extensive disease of the skin*, which will necessarily impair his efficiency as a soldier.

7. *Decided feebleness of constitution*, whether naturally, or acquired.

8. *Scrofula, or constitutional syphilis*, which has resisted treatment, and seriously impaired his general health.

9. *Habitual and confirmed intemperance, or solitary vice*, in degree sufficient to have materially enfeebled the constitution.

10. *Chronic rheumatism*, unless manifested by positive change of structure, wasting of the affected limb, or puffiness or distortion of the joints, does not exempt. Impaired motion of *joints*, and *contraction* of the *limbs*, alleged to arise from rheumatism, and in which the nutrition of the limb is not manifestly impaired, are to be proved by examination, while in a state of anæsthesia, induced by ether only.

11. Pain, whether simulating headache, neuralgia in any of its forms, rheumatism, lumbago, or affections of the muscles, bones, or joints, is a symptom of disease so easily pretended, that it is not to be admitted as a cause for exemption, unless accompanied with manifest derangement of the general health, wasting of a limb, or other positive sign of disqualifying local disease.

12. *Great injuries, or diseases* of the skull, occasioning impairment of the intellectual faculties, epilepsy, or other manifest nervous or spasmodic symptoms.

13. *Total loss of sight ; loss of sight of right eye ; cataract ; loss of crystalline lens of right eye.*

14. Other serious diseases of the eye, effecting its integrity and use, e. g., *chronic ophthalmia, fistula lachrymalis, Ptosis* (if real), *ectropion, entropion, &c.* *Myopia*, unless very decided, or depending upon some structural changes in the eye, is not cause for exemption.

15. *Loss of nose ;* deformity of nose so great as seriously to obstruct respiration. *Ozæna*, dependant upon caries in progress.

16. *Complete deafness.* This disability must not be admitted on the mere statement of the drafted man, but must be proved by the existence of positive disease, or by other satisfactory evidence. *Purulent otorrhœa.*

17. *Caries of the superior and inferior maxillary*, of the nasal or palate bones, if in progress; *cleft palate* (bony): extensive loss of substance of the cheeks, or *salivary fistula*.

18. *Dumbness; permanent loss of voice*, not to be admitted without clear and satisfactory proof.

19. *Total loss of tongue; mutilation or partial loss of tongue*, provided the mutilation be extensive enough to interfere with the necessary use of the organ.

20. *Hypertrophy, or atrophy of the tongue*, sufficient in degree to impair speech or deglutition. *Obstinate chronic ulceration of the tongue.*

21. *Stammering*, if excessive, and confirmed; to be established by satisfactory evidence, under oath.

22. *Loss of a sufficient number of teeth*, to prevent proper mastication of food, and tearing the cartridge.

23. *Incurable deformities, or loss of part of either jaw*, hindering biting of the cartridge, or proper mastication, or greatly injuring speech: *anchylosis of lower jaw.*

24. *Tumors of the neck*, impeding respiration or deglutition: *fistula of larynx, or trachea; torticollis*, if of long standing and well marked.

25. *Deformity of the chest*, sufficient to impede respiration, or to prevent the carrying of arms and military equipments. *Caries of the ribs.*

26. *Deficient amplitude, and power of expansion of chest.* A man 5 feet 3 inches, (minimum standard height for the Regular Army,) should not measure less than thirty inches in circumference, immediately above the nipples, and have an expansive mobility of not less than two inches.

27. Abdomen grossly protuberant; excessive obesity; Hernia, either inguinal or femoral, ventral, umbilical, &c.

28. Artificial anus; stricture of the rectum; prolapsus ani; fistula in ano is not a positive disqualification, but may be so, if extensive, or complicated with visceral disease.

29. Old and ulcerated internal hæmorrhoids, if in degree sufficient to impair the man's efficiency. External hæmorrhoids are no cause for exemption.

30. Total loss, or nearly total loss of penis; epispadias or hypospadias, at the middle, or near the root of the penis.

31. Incurable, permanent, organic, stricture of the urethra, in which the urine is passed drop by drop, or complicated by disease of the bladder. Recent, or spasmodic stricture of the urethra does not exempt. Urinary fistula.

32. Incontinence of urine being a disease frequently feigned, and of rare occurrence, is not, of itself, a cause for exemption. Stone in the bladder, ascertained by the introduction of the metallic catheter, is a positive disqualification.

33. Loss, or complete atrophy of both testicles, from any cause; permanent retention of one or both testicles within the inguinal canal, but voluntary retraction does not exempt.

34. Confirmed, or malignant sarcocoele; hydrocele, if complicated with organic diseases of the testicle. Varicocele and circocoele, are not, in themselves, disqualifying.

35. Excessive anterior and posterior curvature of the spine; caries of the spine.

36. Loss of an arm, fore-arm, hand, thigh, leg, or foot.

37. Wounds, fractures, tumors, atrophy of the limb, or chronic diseases of the joints, or bones, that would impede marching, or prevent continuous muscular exertion.

38. Anchylosis, or irreducible dislocation of the shoulder, elbow, wrist, hip, knee or ankle joint.

39. Muscular or cutaneous contractions, from wounds or burns, in degree sufficient to prevent useful motion of a limb.

40. *Total loss of a thumb, loss of ungual phalanx of right thumb.*

41. *Total loss of any two fingers of same hand.*

42. *Total loss of index finger of right hand.*

43. *Loss of the first and second phalanges of the fingers of the right hand.*

44. *Permanent extension, and permanent contraction of any finger except the little finger ; all the fingers adherent or united.*

45. *Total loss of either great toe ; loss of any three toes on the same foot ; all the toes joined together.*

46. *The great toe crossing the other toes, with great prominence of the articulation of the metatarsal bone, and first phalanx of the great toe.*

47. *Overriding, or superposition of all the toes.*

48. *Permanent retraction of the last phalanx of one of the toes, so that the free border of the nail bears upon the ground ; or flexion at a right angle of the first phalanx of a toe upon a second, with ankylosis of this articulation.*

49. *Club-feet, splay feet, where the arch is so far effaced that the tuberosity of the scaphoid bone touches the ground, and the line of station runs along the whole internal border of the foot, with great prominence of the inner ankle ; but ordinary large, ill-shaped, or flat feet, do not exempt.*

50. *Varicose veins of inferior extremities, if large and numerous, having clusters of knots, and accompanied with chronic swellings or ulcerations.*

51. *Chronic ulcers ; extensive, deep and adherent cicatrices of lower extremities.*

52. *Stature.* If the height of the drafted man be greater than six feet four inches, or less than five feet three inches, he is disqualified for military service. The height in all doubtful cases to be determined by accurate measurement, the recruit being made to stand erect on his bare feet, and

care being taken that he neither increases, nor lessens his stature by voluntary effort.

53. No certificate of a physician or surgeon is to be received, in support of the claims of drafted men for exemption from military service, unless the facts and statements therein set forth are affirmed, or sworn to, before a civil magistrate, competent to administer oaths.

INVALID CORPS.

GENERAL ORDERS, NO. 105.

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE,
WASHINGTON, *April 28, 1863.*

The organization of an Invalid Corps is hereby authorized.

This Corps shall consist of Companies, and if it shall hereafter be thought best, of Battalions.

The Companies shall be made up from the following sources, viz:

First. By taking those officers and enlisted men of commands now in the field (whether actually present or temporarily absent) who, from wounds received in action or disease contracted in the line of duty, are unfit for field service, but are still capable of effective garrison duty, or such other light duty as may be required of an Invalid Corps. Regimental Commanders shall at once make out, from information received from their Medical and Company Officers, and from their own knowledge, rolls (according to the Form furnished) of the names of all the officers and enlisted men under their commands who fulfil the following conditions, viz:

1. That they are unfit for active field service on account of wounds or disease contracted in the line of duty; this fact being certified by a Medical Officer in the service, after personal examination.

2. That they are fit for garrison duty; this fact being likewise certified by the Medical Officer, as above, after personal examination.

3. That they are, in the opinion of their Commanding Officers, meritorious and deserving.

These rolls shall be certified by the Examining Surgeon, and Regimental Commander, and transmitted, through the regular channels of military correspondence, to the Provost Marshal General of the United States.

The Regimental Commander shall enter in the column of remarks, opposite each officer's name on the roll, a statement as to the general character of the officer for intelligence, industry, sobriety, and attention to duty; and all intermediate Commanders shall indorse thereon such facts as they may possess in the case, or if they have none, they shall state how far they are willing to indorse the opinion of the officer or officers making the recommendation. Similar rolls shall be forwarded from time to time, whenever the number of men fulfilling the conditions enumerated or the exigencies of the service may render it expedient.

Second. By taking those officers and enlisted men still in service and borne on the rolls, but who are absent from duty, in Hospitals or Convalescent Camps, or are otherwise under the control of Medical Officers. In these cases the Medical Officer in attendance shall prepare the rolls according to Form, entering the names of officers and men from the same Regiment on a roll by themselves, and send them, with the certificate of the Surgeon, duly signed, to the proper Regimental Commander, who will forward them, as heretofore specified, subject to the same conditions and requirements. If, in any case, the Regimental Commander shall think an officer unfit, in point of character, to continue in the service of the Invalid Corps, though disabled and certified by the Surgeon, he will state his objection in the column of remarks, and note the exception before signing the certificate. If any officer or enlisted man now in the service, but absent and beyond the reach of a Medical Officer in charge of a Hospital or Convalescent Camp, desires to enter this Corps,

he will take the course indicated below for those who have been honorably discharged the service.

Third. By accepting those officers and enlisted men who have been honorably discharged on account of wounds or disease contracted in the line of duty, and who desire to re-enter the service. In the case of an officer, application for appointment must be made to the Provost Marshal General of the United States through the officer detailed as Acting Assistant Provost Marshal General of the State. No application of this kind will be considered unless the following conditions are completely fulfilled :

1. That the applicant produce the certificate of the Surgeon of the Board of Enrolment for the District in which he resides, that he is unfit for active field duty on account of wounds or disease, and is not liable to draft, but is fit for garrison duty.

2. That he furnish evidence of honorable discharge on account of wounds or disability contracted in the line of duty.

3. That he produce recommendations from the Regimental, Brigade, and Division Commanders under whom he formerly served, that he is worthy of being thus provided for and capable of returning adequate service to the Government. In case it shall be impracticable to get this last evidence, he may, having established the first two points above, satisfy the Board of Enrolment that he is deserving, and present its certificate of the fact. This evidence must all be obtained by the applicant, and must be transmitted with his application for appointment.

If there be no Acting Assistant Provost Marshal General for the State, the application may be forwarded through the Adjutant-General of the State, who is desired to indorse thereon such facts in the military history of the applicant as he may know, or as are afforded by his records, and forward the same to the Provost Marshal General of the United States. Enlisted men, honorably discharged on account of

disability, desiring to re-enlist in this Corps, will present themselves to the Board of Enrolment for the District in which they reside, for examination by the Surgeon thereof, who shall examine them and report the result to the Board of Enrolment.

The Board shall then consider each case, and if the applicant is found to fulfil the conditions specified below, the Board shall give him a certificate to that effect, viz:

1. That he is unfit for service in the field.
2. That he is fit for garrison duty.
3. That he is meritorious and deserving.
4. That he was honorably discharged from the service.

The Provost Marshal for the District shall then send the application, with this certificate of the Board, to the Acting Assistant Provost Marshal General of the State, who shall procure such evidence of service and character as the records of the Company to which he belonged, on file at the Headquarters of the State, may show, and if satisfied that it is a meritorious case, and that the man is deserving, he will enlist him in accordance with such special rules as the Provost Marshal General may establish.

Medical Inspectors, Surgeons in charge of Hospitals, Military Commanders, and all others having authority to discharge, under existing laws and regulations, are forbidden to grant discharges to any men under their control who may be fit for service in the Invalid Corps.

The Provost Marshal General is charged with the execution of this order, and the troops organized under it will be under the control of his Bureau.

By order of the Secretary of War :

E. D. TOWNSEND,
Assistant Adjutant-General.

OFFICIAL.

GENERAL ORDERS, NO. 130.

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE,
WASHINGTON, *May 15, 1863.*

In executing the provisions of General Orders, No. 105, from this Department, in regard to the selection of men for the Invalid Corps, Medical Inspectors, Surgeons in charge of Hospitals, Camps, Regiments, or of Boards of Enrolment, Military Commanders, and all others required to make the physical examination of men for the Invalid Corps, will be governed in their decisions by the following list of qualifications and disqualifications for admission into this Corps:

PHYSICAL INFIRMITIES THAT DO NOT DISQUALIFY ENLISTED
MEN FOR SERVICE IN THE "INVALID CORPS."

1. Paralysis, if confined to the left upper extremity, and the man's previous occupation fit him for the duty of clerk, orderly, &c.
2. Simple hypertrophy of the heart, unaccompanied by valvular lesion; functional derangement of the stomach (dyspepsia); mild chronic diarrhœa; simple enlargement of the liver or spleen; a temporary ailment of the kidneys or bladder.
3. Chronic rheumatism, unless manifested by positive change of structure, wasting of the affected limb or puffiness or distortion of the joints.
4. Pain, unless accompanied with manifest derangement of the general health, wasting of a limb, or other positive sign of disease.
5. Myopia, unless very decided or depending upon structural change of the eye.
6. Stammering, unless excessive and confirmed.
7. Loss of teeth or unsound teeth.
8. Torticollis.
9. Reducible hernia.

10. Hemorrhoids.
11. Stricture of the urethra.
12. Incontinence of urine.
13. Loss or complete atrophy of both testicles from any cause; permanent retention of one or both testicles within the inguinal canal.
14. Varicocele and cirsocele.
15. Loss of left arm, left forearm, or left hand, if the man be qualified for duty of clerk or orderly.
16. Loss of leg or foot, provided the man have the inclination and aptitude for service in a general hospital, and is recommended for that duty by a medical officer, or if qualified for the duty of clerk or orderly.
17. Old and irreducible dislocation of shoulder and elbow in which the bones have accommodated themselves to their new relations.
18. Muscular and cutaneous contraction of left arm, provided the man may be employed as clerk, orderly, or messenger.
19. Loss of left thumb; partial loss of either thumb.
20. Loss of first and second phalanges of all the fingers of the left hand.
21. Total loss of any two fingers of the same hand.
22. Total loss of index finger of right hand.
23. Permanent extension of any finger of the right hand; permanent extension or contraction of any finger of the left hand.
24. Adherent or united fingers.
25. Loss of any toe or toes except the great toe; all the toes joined together.
26. Deformities of the toes, if not sufficient to prevent walking.
27. Large, flat, ill-shaped feet that do not come within the designation of talipes valgus.
28. Varicose veins not accompanied with ulcerations.

29. Gunshot wounds or injuries not involving loss of function.

30. None of the foregoing infirmities disqualify officers for service in the Invalid Corps.

31. The loss of the right arm does not disqualify officers or enlisted men for service in the Invalid Corps.

In all cases where the physical infirmities of officers or enlisted men come within the provisions of the above list, they will be recommended for transfer to, or enlistment in, the Invalid Corps; but no one will be admitted into this Corps, whose previous record does not show that he is meritorious and deserving, and that he has complied with the provisions of General Orders, No. 105, War Department, Adjutant General's Office, 1863, authorizing an Invalid Corps.

PHYSICAL INFIRMITIES THAT DISQUALIFY ENLISTED MEN
FOR SERVICE IN THE INVALID CORPS.

1. Manifest imbecility or insanity.
2. Epilepsy, if the seizures occur more frequently than once a month, and have obviously impaired the mental faculties.
3. Paralysis or chorea.
4. Acute or organic diseases of the brain or spinal chord; of the heart or lungs; of the stomach or intestines; of the liver or spleen; of the kidneys or bladder, sufficient to have impaired the general health, or so well marked as to leave no reasonable doubt of the man's incapacity for military service.
5. Confirmed consumption; cancer; aneurism of important arteries.
6. Inveterate and extensive disease of the skin.
7. Scrofula, or constitutional syphilis, which has resisted treatment and seriously impaired the general health.
8. Habitual or confirmed intemperance, or solitary vice,

sufficient in degree to have materially enfeebled the constitution.

9. Great injuries or diseases of the skull, occasioning impairment of the intellectual faculties, epilepsy, or other serious nervous or spasmodic symptoms.

10. Total loss of sight, or other serious diseases of the eye, affecting its integrity and use.

11. Loss of nose, or deformity of nose, if sufficient seriously to obstruct respiration; ozæna, if dependent upon caries.

12. Deafness.

13. Dumbness; permanent loss of voice.

14. Total loss of tongue, partial loss, and hypertrophy or atrophy of tongue, if sufficient to make the speech unintelligible and prevent mastication or deglutition.

15. Incurable deformities of either jaw, whether congenital or produced by accident, which would prevent mastication or greatly injure the speech.

16. Tumors of the neck impeding respiration or deglutition; fistula of larynx or trachea.

17. Deformity of the chest, sufficient to impede respiration, or to prevent the carrying of arms and military equipments; caries of the ribs; gunshot wound of the lung, if complicated with fracture of a rib.

18. Artificial anus; severe stricture of the rectum.

19. Total loss, or nearly total loss, of penis; epispadia, of hypospadia, at the middle or nearer the root of penis; stone in the bladder.

20. Confirmed or malignant sarcocele; hydrocele, if complicated with organic disease of the testis.

21. Excessive anterior or posterior curvature of spine; caries of the spine; lumbar abscess.

22. Loss of a thigh.

23. Wounds, fractures, tumors, atrophy of a limb, or chronic diseases of the joints or bone that would prevent marching or any considerable muscular exertion.

24. Anchylosis, or irreducible dislocation of the shoulder, elbow, wrist, hip, knee, or ankle joint.

25. Muscular or cutaneous contractions from wounds, or burns, in degree sufficient to prevent useful motion of the right arm, or of the lower extremities.

26. With the exception of those paragraphs which refer to the total or partial loss of an extremity, the foregoing disabilities disqualify officers as well as enlisted men for service in the Invalid Corps.

In all cases where the physical infirmities of an officer or enlisted man come within the provisions of this list, or where his previous record shows that he is not entitled to be received into the Invalid Corps, he will if in service, be discharged, and if an applicant to re-enter, his application will be disapproved.

Whilst the government is most anxious to provide for and employ, to the best of their abilities, those faithful soldiers who, from wounds or the hardships of war, are no longer able to perform active duty in the field, yet it can, upon no account, permit men, undeserving or totally disabled, to re-enter its service.

Those faithful soldiers whose physical infirmities are too great to admit of their being of any use in the Invalid Corps will, nevertheless, receive the pensions and bounties provided by law.

It is further announced that no officer or enlisted man shall be entitled to or receive any pension, premium, or bounty, for enlistment, re-enlistment, or service in the Invalid Corps. They will receive all other pay and allowances now authorized by law for the U. S. Infantry, except the increased pay for re-enlistment. Claims for pensions or bounties which may be due for previous service will not be invalidated by enlistment in the Invalid Corps. But no pensions can be drawn or accrue to the benefit of any man during his service in said Corps. The officers and men will be organized into

Companies of Infantry, of the same strength as is now authorized by law for the U. S. Infantry. No organized Brigades, Regiments, Companies, or parts of Companies, will be accepted as such. Enlistments in this Corps will be for three years, unless sooner discharged.

By order of the Secretary of War.

E. D. TOWNSEND,

Assistant Adjutant-General.

PRUSSIA.

DISEASES AND DISABILITIES

CAUSING PERMANENT UNFITNESS FOR THE MILITARY SERVICE.

1. Chronic and incurable *tinea capitis*.
2. Chronic *pliea Polonica* incurable in itself, or on account of cachectic state of patient.
3. Incurable baldness of half of the scalp.
4. Deformities of the skull, particularly of the occiput, preventing the wearing of the regulation head-dress.
5. Loss of substance of the bones of the skull, caused by caries or injuries; also exostosis and encephaloecele.
6. Amblyopia, caused by diseases of the nerves, maculæ of the cornea, or other organic alterations of the eye.
7. Blindness, or extensive disturbance of vision of one, or both eyes, caused by cataract, amaurosis, or other lesions of the external or internal portions of the eye.
8. Chronic inflammation of one or both eyes and eyelids.
9. Entropion or ectropion of one or both lids.
10. Lachrymal fistula, or epiphora caused by incurable diseases of the lachrymal passages.
11. Myopia, proved by changes in the eye; or if a person cannot be identified at the distance of ten feet.
12. Nyctalopia and hemeralopia.
13. Strabismus of both eyes, with disturbed vision.
14. Chronic deafness, whether partial or complete.
15. Offensive otorrhœa caused by caries or other obstinate diseases.
16. Diseases of the cavities of the nose, frontal bone, or upper jaw, with caries. Ozæna.

17. Loss of nose, or deformities, in consequence of destruction of its bones.
18. Strictures of the nasal passages impeding respiration when the mouth is closed.
19. Incurable polypi of nose or pharynx.
20. Absence of uvula.
21. Bony fissure of the palate obstructing speech.
22. Tumor or malignant ulcers of tongue or mouth; extensive adhesions of the lips, or cheeks to the gums, causing partial closing or deformity of mouth.
23. Extensive loss of substance of the tongue or hypertrophy, obstructing speech or deglutition.
24. Dumbness.
25. Excessive stammering.
26. Old salivary fistula.
27. Total loss of all the front teeth, the eye-teeth, and first molars, even if only of one jaw.
28. Hare-lip, with bony fissure, or cancer of the lips.
29. Chronic bronchocele.
30. Extensive goitre, when slight pressure causes an impediment to respiration.
31. Abnormal development or position of the larynx with difficulty of breathing—fistula of the larynx.
32. Scrofulous or scirrhus enlargement of glands in any part.
33. Laryngeal or tracheal phthisis.
34. Stricture of œsophagus.
35. Torticollis.
36. Rickets—deafness, and deformities of thorax.
37. Chronic asthma.
38. Offensive breath caused by incurable disease of lungs.
39. Periodic hæmoptysis, hæmatemesis; or hæmaturia, caused by chronic disease of the urinary organs.
40. Fistula of the thorax, or abdomen connected with the cavity itself.

41. Deformities of the pelvis.
42. Irreducible hernia, where a truss cannot be worn.
43. Large hydrocele.
44. Cancer of testes, or sarcocele.
45. Large varicocele, painful in the upright posture.
46. Fistula in ano; faecal fistula; artificial anus.
47. Prolapsus ani, and incontinence of fæces.
48. Large hæmorrhoidal tumors, with periodical hæmorrhage and ulcerations.
49. Dysuria and enuresis.
50. Diseases caused by vesical calculi.
51. Stricture and injuries of the urethra—swelling or induration of prostate gland—incurable urinary fistula.
52. Hypospadias, with unnatural voiding of water.
53. Loss of one of the lower limbs.
54. Abnormities of size, or direction of the extremities, their atrophy or paralysis.
55. Stiffness, or loss of use, of the larger joints in consequence of scars, contractions, tumors, or ankylosis; concretions within the joint, chronic exudation, and luxation.
56. Abnormal conditions of bones preventing their use, and caused by either internal or external diseases (fractures &c.).
57. Weakness of capsular ligaments of joints occasioning frequent luxation, while discharging ordinary duties.
58. Enlarged and painful ganglia of the joints, forming adhesions with internal parts, and preventing motion.
59. Loss, stiffness, or deformity of thumb of either hand.
60. Loss of right forefinger.
61. Loss of one, two, or more fingers of either hand.
62. Stiffness, or deformity of finger, preventing its use.
63. Supernumerary fingers impeding the use of the hand.
64. Ankylosis of fingers caused by adhesion, between them.

65. Flat foot, and when the man walks on the inner margin of the foot.

66. Old ulcers frequently opening, particularly those of the feet, associated with varicose veins, infiltration of cellular tissue and bone.

67. Extensive and feeble cicatrices, following such ulcers.

68. Adherent cicatrices occasioning contractions and impeding motion.

69. Large and painful varicose veins occupying a great portion of the feet and lower extremities, and easily bursting.

70. Loss of one or both great toes, or of several other toes.

71. Abnormities in the position, or outward direction of the great toe, causing protuberances (bunions).

72. Extensive curvatures and crossing or over-riding of toes.

73. Supernumerary toes interfering with the wearing of shoes.

74. Tumors of the toes preventing the wearing of shoes.

75. Offensive and excessive perspiration (hyperydrosis) with excoriations of the feet.

76. Aneurism.

77. Caries or other diseases of the bones caused by a cachectic state.

78. Organic diseases of the heart accompanied by dyspnoea, disturbances of the circulation, palpitations, &c.

79. Scrofula, with enlargement or ulcerations of glands.

80. Impending tuberculosis suspected from malformations of the thorax.

81. Tuberculosis of lungs.

82. Empyema.

83. Extensive emphysema.

84. Internal abscesses—(suppurations or ulcerations of internal organs)—recognized by pathognomonic symptoms or their influence upon the system.

85. Phthisis.

86. Chronic dropsy, or jaundice caused by deep-seated diseases of the abdominal viscera.
 87. Malignant and chronic cutaneous diseases.
 88. Weakness of lungs, caused by malformations of the thorax, even without apparent inclination to tuberculosis.
 89. General debility.
 90. General deformity.
 91. Obesity.
 92. Epilepsy or other periodic convulsions.
 93. Partial or general tremor.
 94. Catalepsy.
 95. Chronic vertigo.
 96. Somnambulism.
 97. Chronic gout and rheumatism.
 98. Habitual drunkenness.
 99. Idiocy.
 100. Mental disease.
-

INVALID CORPS.

The Prussian Invalid Corps is recruited from the *half-invalids* of the Army, discharged on medical certificate as unfit for field-service, yet still able to perform garrison duty. The following are the official instructions for the guidance of military surgeons in determining this degree of invalidity.

SECTION XXXVII.*

OF DEGREES OF INVALIDITY, AND OF DISEASES AND INFIRMITIES CAUSING HALF-INVALIDITY.

The Surgeon will need to employ all his skill in this particular form of investigation, since the same cause, manifesting itself in different degrees, may occasion either full, or half-invalidity.

BODILY INFIRMITIES CONSTITUTING HALF-INVALIDITY.

1. Loss of substance of the bones of the skull in consequence of wounds, providing the wearing of the head-dress occasions no distress.

2. Amblyopia of a slight degree, consequent upon nervous affections, opacities of the cornea (maculæ) or other organic changes.

3. Amaurosis of left eye, the right being perfectly healthy.

4. Progressing deafness.

5. Loss of front teeth.

6. Advanced bronchocele.

7. The highest degree of bronchocele, the gland being much enlarged, without injury to respiration.

8. Varicocele which is troublesome, when no suspensory bandage is worn.

9. Small hydrocele, the patient refusing to submit to an operation, or the latter being impossible for other reasons.

10. Slight swelling, or induration of testis.

11. Chronic affections of the lungs, weakness and irritation in consequence of acute diseases, chronic catarrh of lungs or trachea, chronic hoarseness.

* For title of these instructions, see *Preface*.

12. Slight asthma.
13. Chronic diseases of the bowels, with habitual indigestion and cramps.
14. Piles, painful swellings around the anus, hæmorrhoids of the bladder.
15. Chronic muscular rheumatism.
16. Weakness of joints after wounds and luxations.
17. Weakness of limbs after fractures, with recurrent pains upon changes of weather.
18. Chronic varices, without pain.
19. Cicatrices of ulcers of the feet when they break easily in walking. Also, shortening of a leg after fracture, which can be remedied by mechanical means.

SECTION XLII.

MEDICAL CERTIFICATES FOR SOLDIERS.

The certificates of disability, or invalidity (with the name of the authority that asks for them), must be brief and exact; state the degree of invalidity, and its causes, so far as they are known to the surgeon, remembering particularly whether such invalidity was caused by wounds, immediate injuries* in the service, or arose as a simple consequence of the service, or not at all in connection with it.

* The phrase "immediate injuries received in the service" implies *accidents* occurring to soldiers, but not necessarily in war; such, for example, as are caused by explosions of powder, burns while firing salutes, bursting of guns; injuries received in drilling, falling with a horse, or from the walls of a fortress, &c., &c.

SECTION XLV.

SUPERVISION OF MEDICAL CERTIFICATES BY THE SURGEON-GENERAL OF AN ARMY CORPS.

Every certificate must be laid before the surgeon-general of an army corps, by the chief of its staff for final inspection and approval.

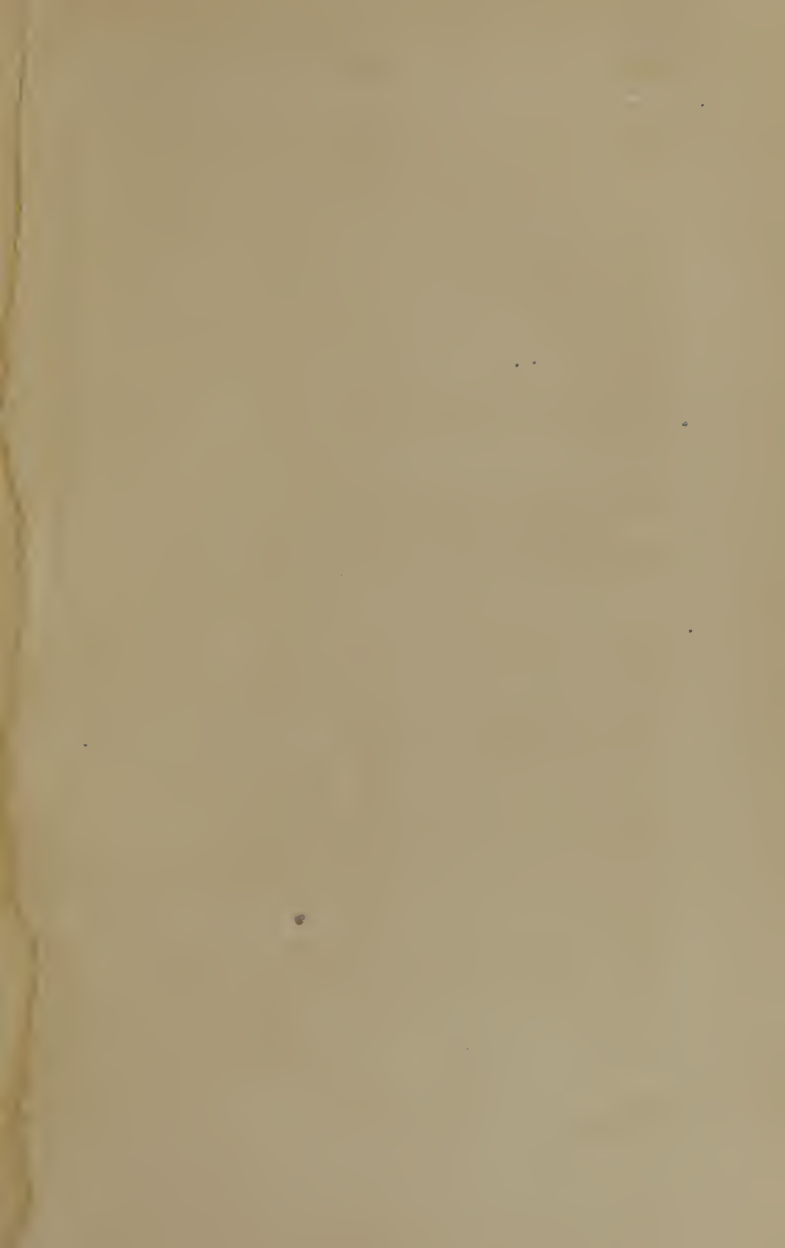
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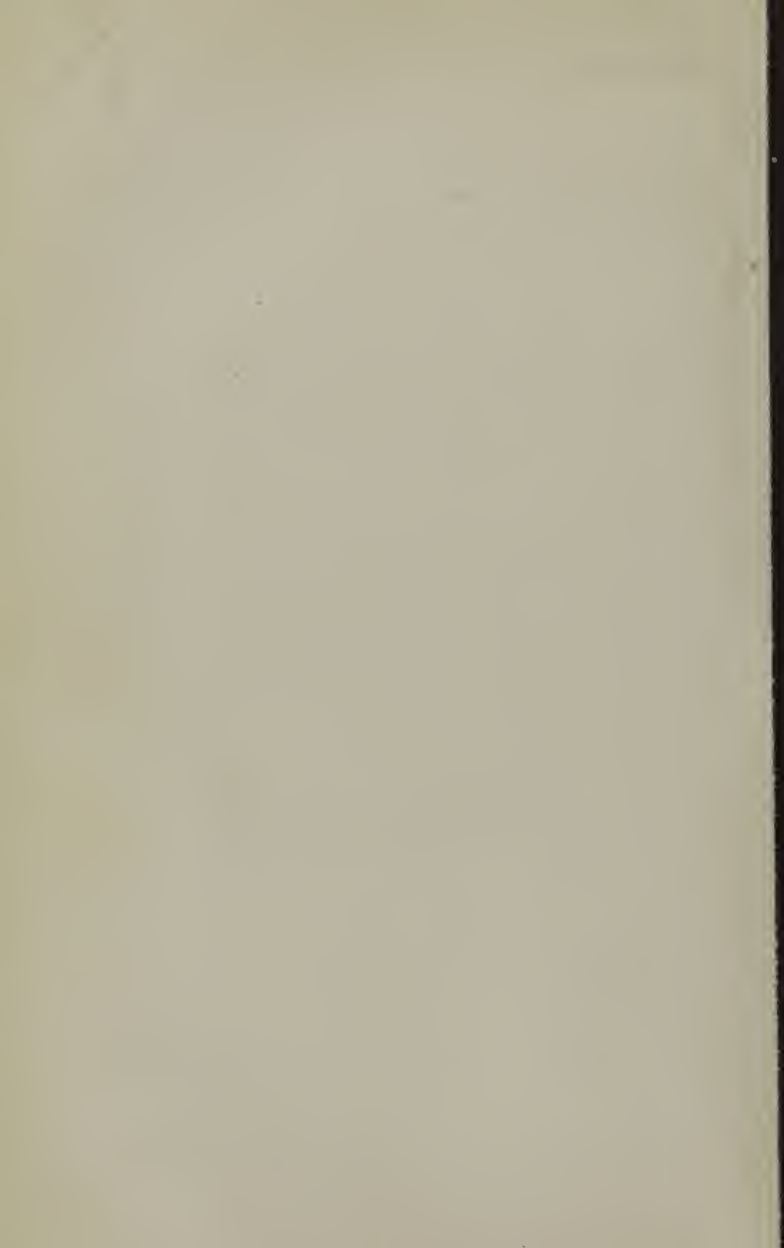
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